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## STANDARD DRAWINGS

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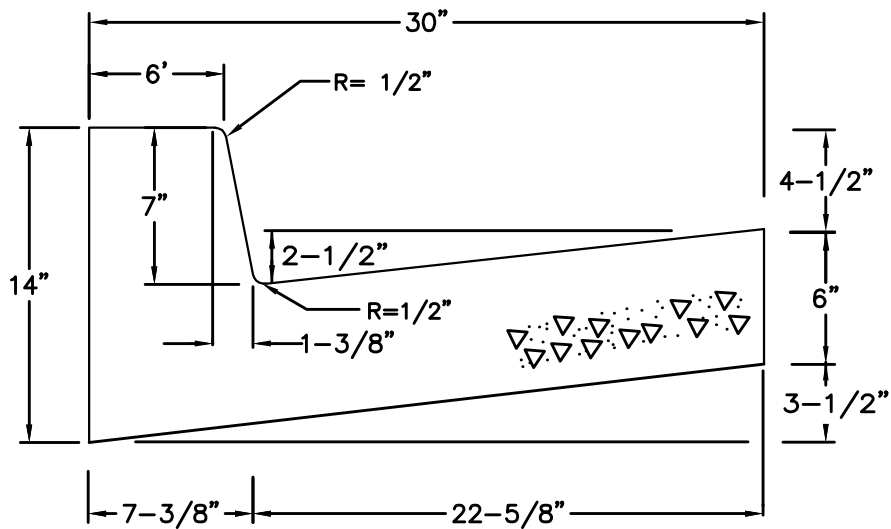
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STANDARD CURB & GUTTER  
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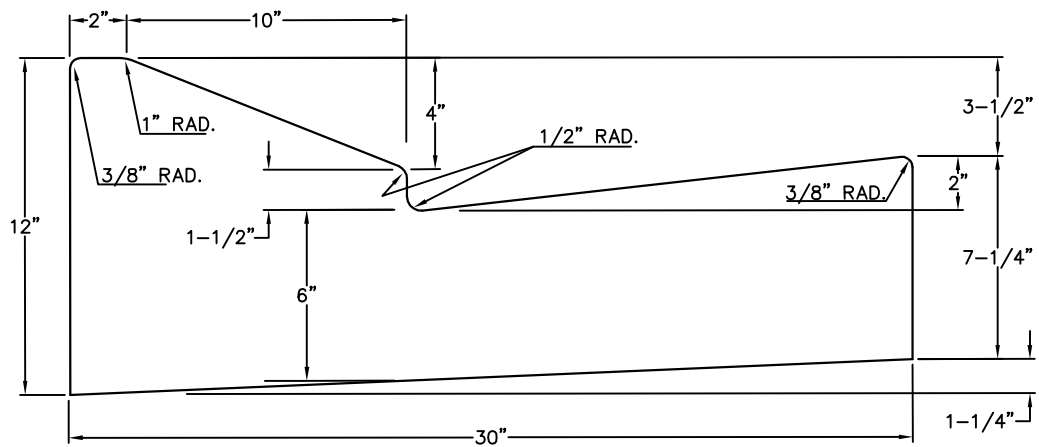
NOTES:  
1. ALL CONCRETE SHALL BE CLASS "A".

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD HIGHBACK CURB & GUTTER  
DETAIL

STANDARD DWG. NO.	
100	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE

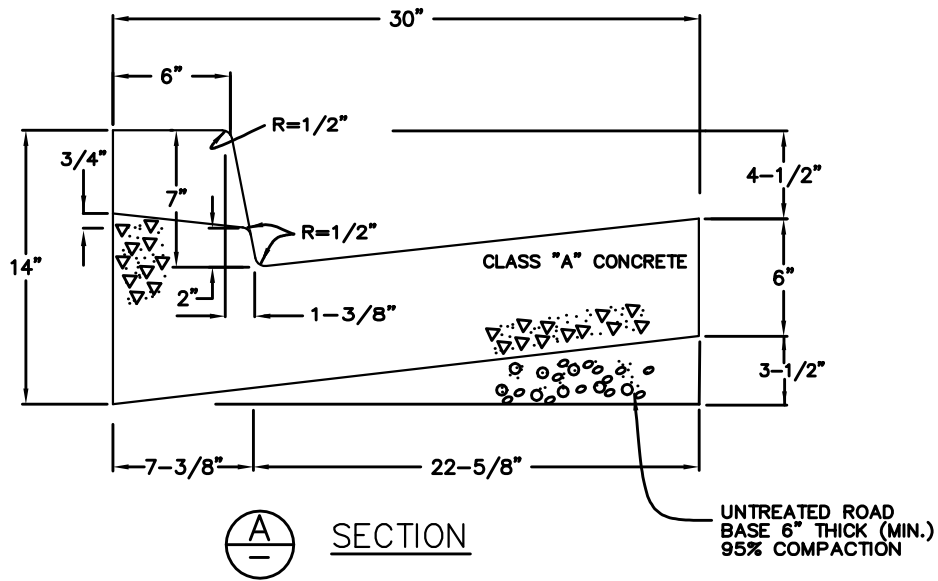


RU30

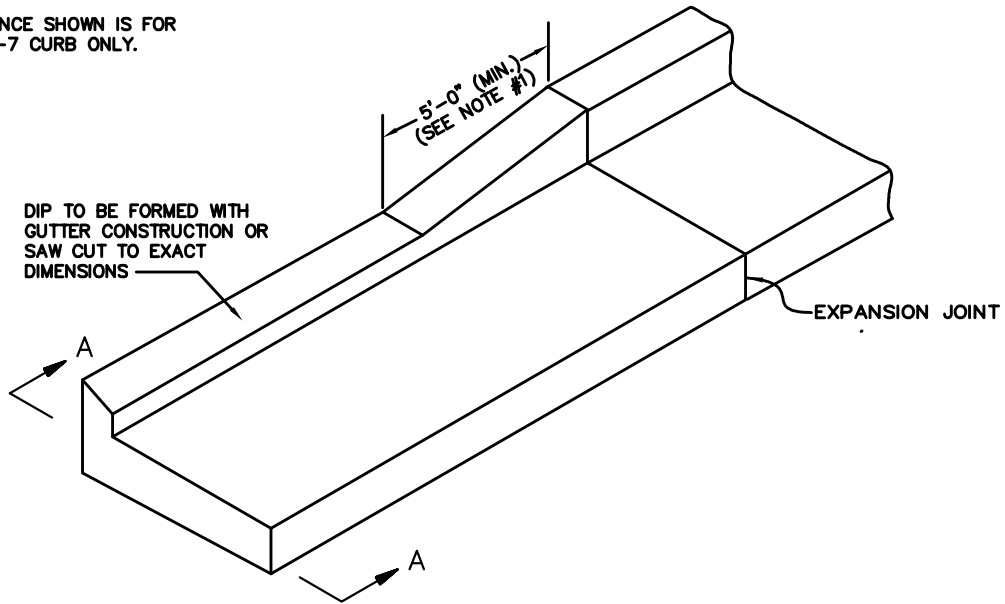
NOTES:

1- ALL CONSTRUCTION & MATERIALS SHALL CONFORM TO COUNTY STANDARDS.

REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	MODIFIED CONCRETE CURB & GUTTER (RU30)		101	1 OF 1
					APPROVED:	
					DATE: MAY 2009 BY: TE	



NOTES:  
1- DISTANCE SHOWN IS FOR  
HB30-7 CURB ONLY.



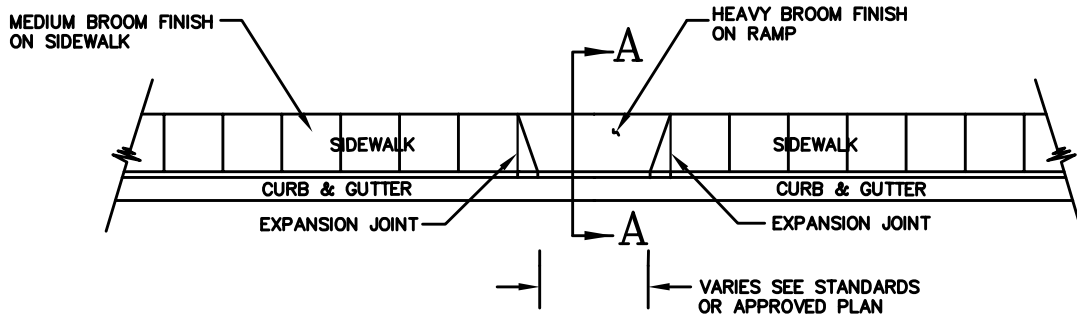
NO SCALE

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

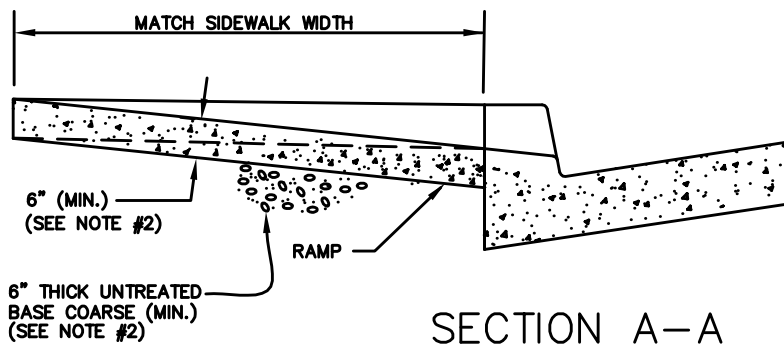
REVISIONS		
DATE	DESCRIPTION	BY

DRIVEWAY CURB (TYPE HB30-7)  
DETAILS

STANDARD DWG. NO.	
110	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



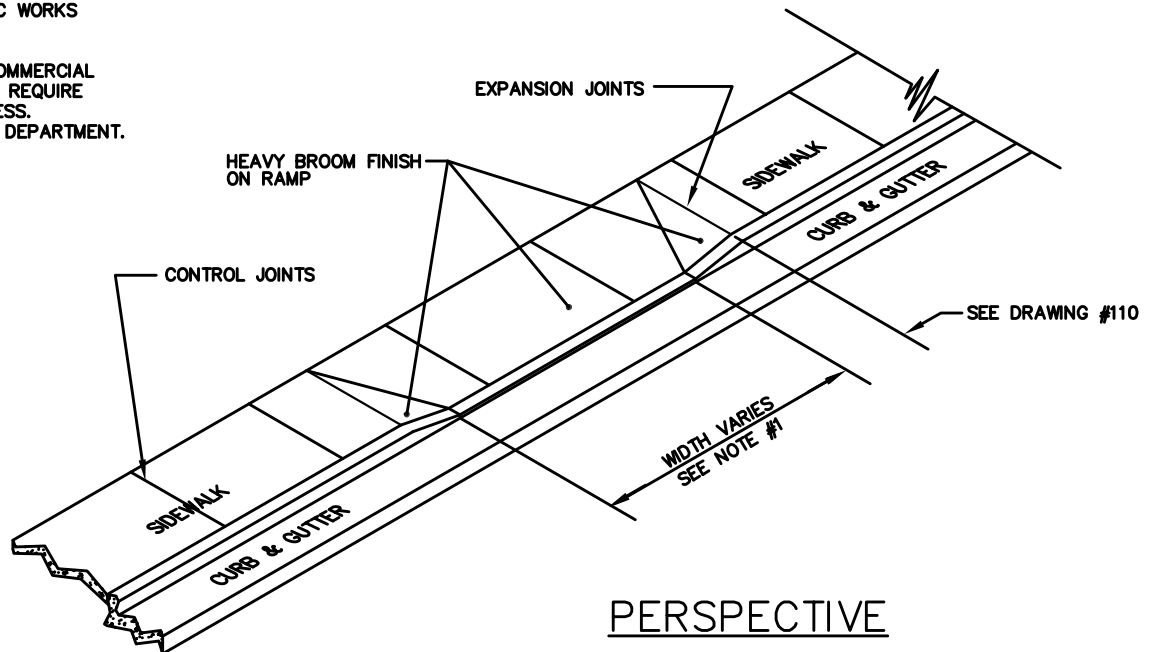
PLAN



SECTION A-A

NOTES:

- 1- WIDTH OF DRIVEWAYS VARIES WITH USE- SEE COUNTY STANDARDS OR CONTACT PUBLIC WORKS DEPARTMENT.
- 2- DRIVEWAYS WITH COMMERCIAL OR INDUSTRIAL USE REQUIRE ADDITIONAL THICKNESS. SEE PUBLIC WORKS DEPARTMENT.



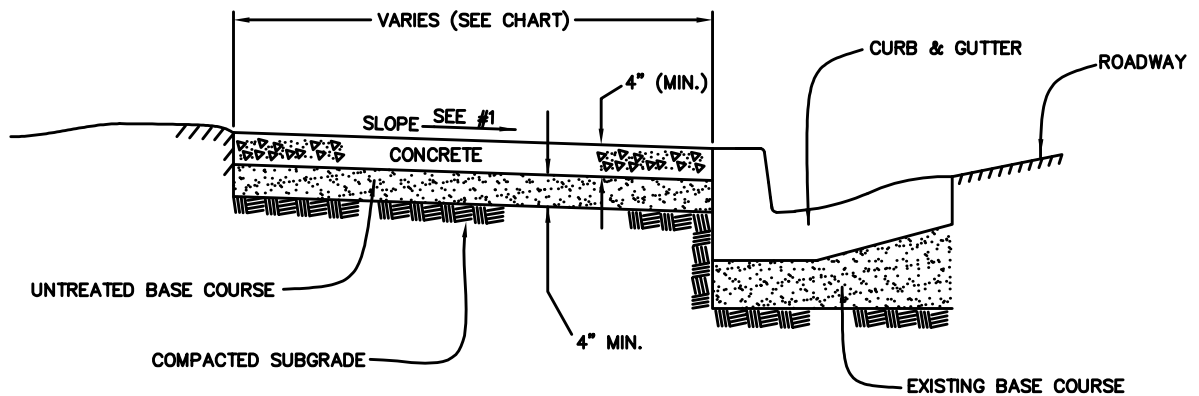
PERSPECTIVE

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

DRIVEWAY APRON  
DETAILS

STANDARD DWG. NO.	
111	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



#### GENERAL NOTES

- 1- CROSS SLOPE SHALL BE 2% FROM TOP OF CURB
- 2- UNTREATED BASE COURSE SHALL BE PLACED UNDER SIDEWALK AND COMPACTED TO A MIN. OF 95% THICKNESS OF UNTREATED BASE NOT LESS THAN 4 INCHES.
- 3- USE CLASS "A" CONCRETE ONLY (6 BAG, TYPE V CEMENT).
- 4- SIDEWALK SURFACE TO HAVE A MEDIUM BROOM FINISH.
- 5- WHERE SIDEWALKS CROSS DRIVEWAYS, MINIMUM THICKNESS SHALL BE AS FOLLOWS:  
RESIDENTIAL: 6" FOR SIDEWALK, 6" FOR ROADBASE  
COMMERCIAL/INDUSTRIAL: 8" FOR SIDEWALK, 8" FOR ROADBASE.
- 6- FIBER EXPANSION JOINTS SHALL BE PLACED AT BOTH ENDS OF DRIVEWAY
- 7- FIBER EXPANSION JOINTS SHALL ALSO BE PLACED BETWEEN DRIVEWAY AND BACK OF SIDEWALK.

SIDEWALK	ROAD TYPE		
	LOCAL	COLLECTOR	ARTERIAL
WIDTH	4'	5'	5'+
SCORE JOINT SPACING	4'	5'	5'+
EXPANSION JOINT SPACING	20'	20'	20'

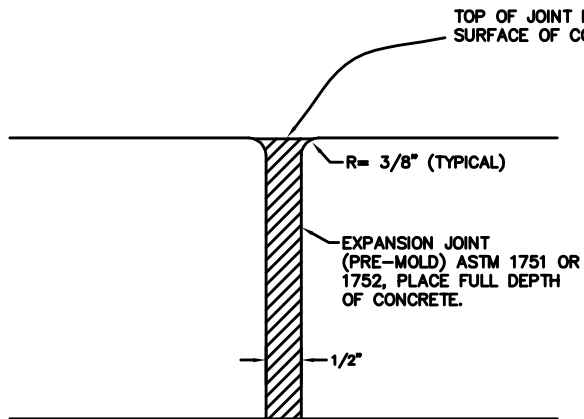
#### WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

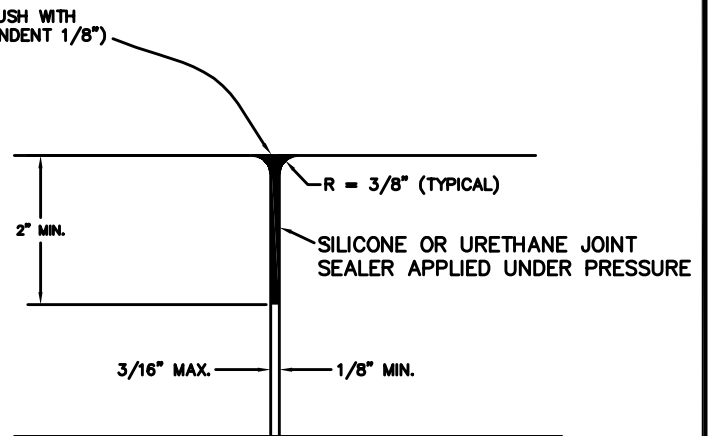
#### STANDARD SIDEWALK DETAILS

STANDARD DWG. NO.	
120	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE

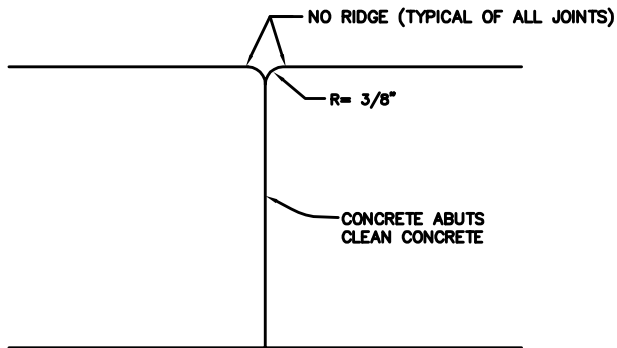




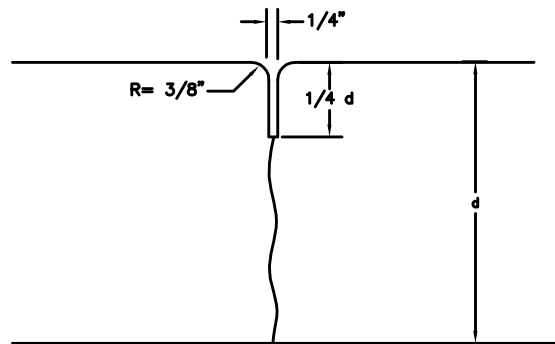
EXPANSION JOINT



FORM PLATE JOINT



COLD JOINT



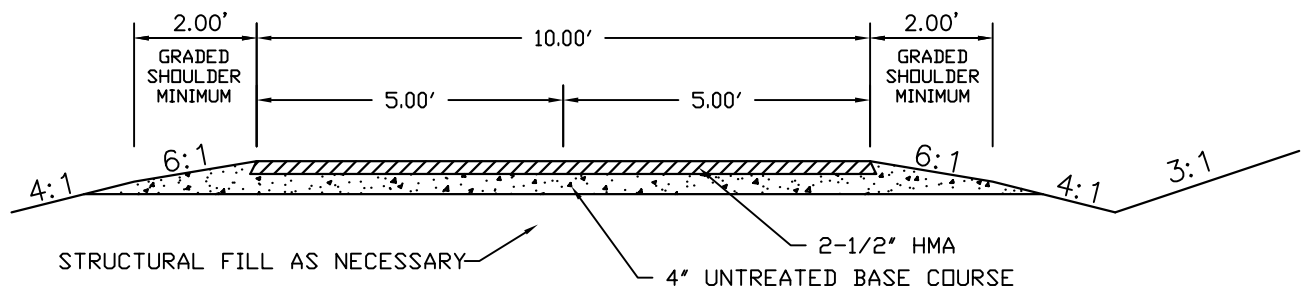
CONTROL JOINT

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD CONCRETE JOINT  
DETAILS

STANDARD DWG. NO.	
122	1 OF 1
APPROVED:	
DATE: MAY 2009 BY: TE	



### TYPICAL SECTION

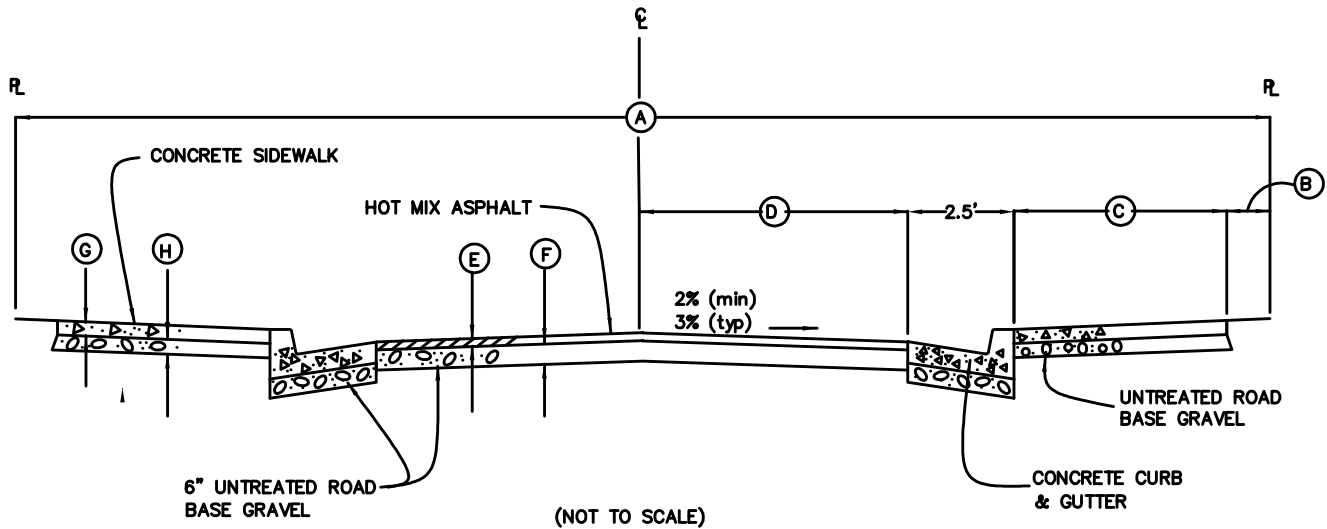
NOTE: TRAIL TO MEET AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO) "GUIDE FOR DEVELOPMENT OF BICYCLE FACILITIES" DESIGN STANDARDS.

### WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

10' TRAIL SECTION

STANDARD DWG. NO.	
130	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



DIMENSIONS				
MARK	LOCAL	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL
A	50'	60'	66'	80'+
B	1'	1'	1'	1'
C	4'	5'	5'	5'+
D	17.5'	21.5'	24.5'	31.5' (min)
E(MIN)	3"	3"	3"	4"
F	SEE STANDARD SPECIFICATIONS			
G	4" FOR SIDEWALK, 6" FOR DRIVEWAY APRONS			
H	4" UNDER SIDEWALKS, 6" UNDER DRIVEWAYS			

NOTES:

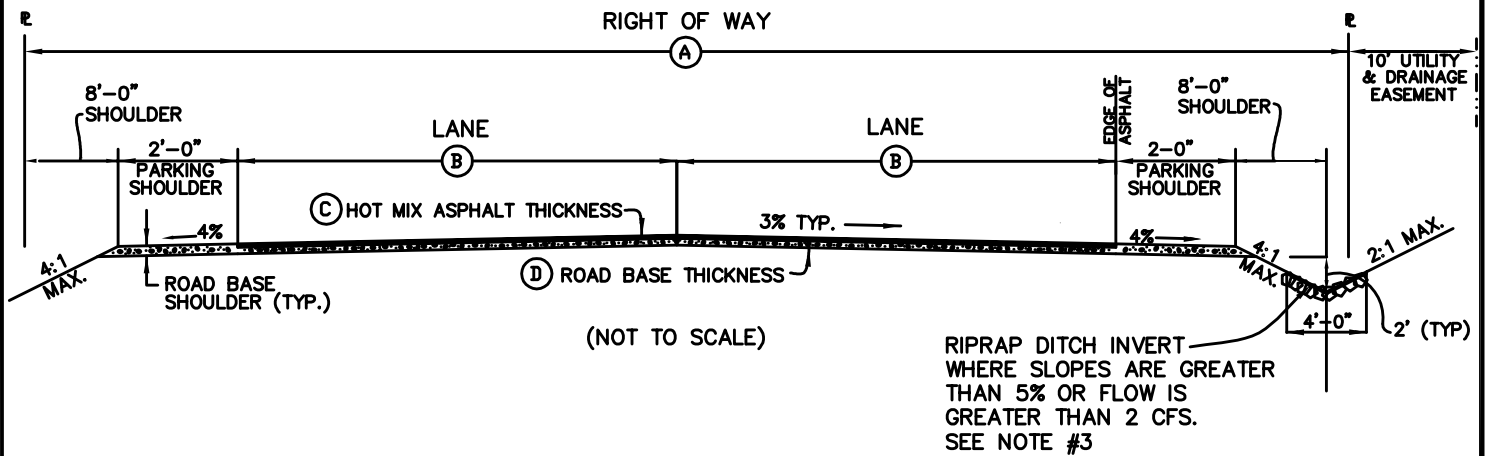
- 1- MAXIMUM ALLOWABLE DIFFERENCE IN CURB ELEVATION SHALL BE 12 INCHES AND MUST HAVE COUNTY REPRESENTATIVE APPROVAL PRIOR TO ITS USE.
- 2- FOR ROADS IN OR SERVING INDUSTRIAL AREAS, ASPHALT AND BASE THICKNESS SHALL BE INCREASED ACCORDING TO PROVISIONS FOR HEAVY TRUCK TRAFFIC.
- 3- MINIMUM ASPHALT THICKNESS IS SHOWN. THICKNESS SHALL BE BASED UPON ACTUAL ENGINEERING ANALYSIS, BUT IN NO CASE SHALL IT BE LESS THAN THE MINIMUM.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD ROAD CROSS SECTIONS  
WITH CURB, GUTTER AND SIDEWALK

STANDARD DWG. NO.	
140	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



DIMENSIONS				
MARK	LOCAL	MINOR COLLECTOR	MAJOR COLLECTOR	ARTERIAL
A	50'	60'	66'	80'+
B	14'	19'	22'	29'(MIN)
C(MIN)	3'	3'	3'	4'
D	SEE STANDARD SPECIFICATIONS			

**NOTES:**

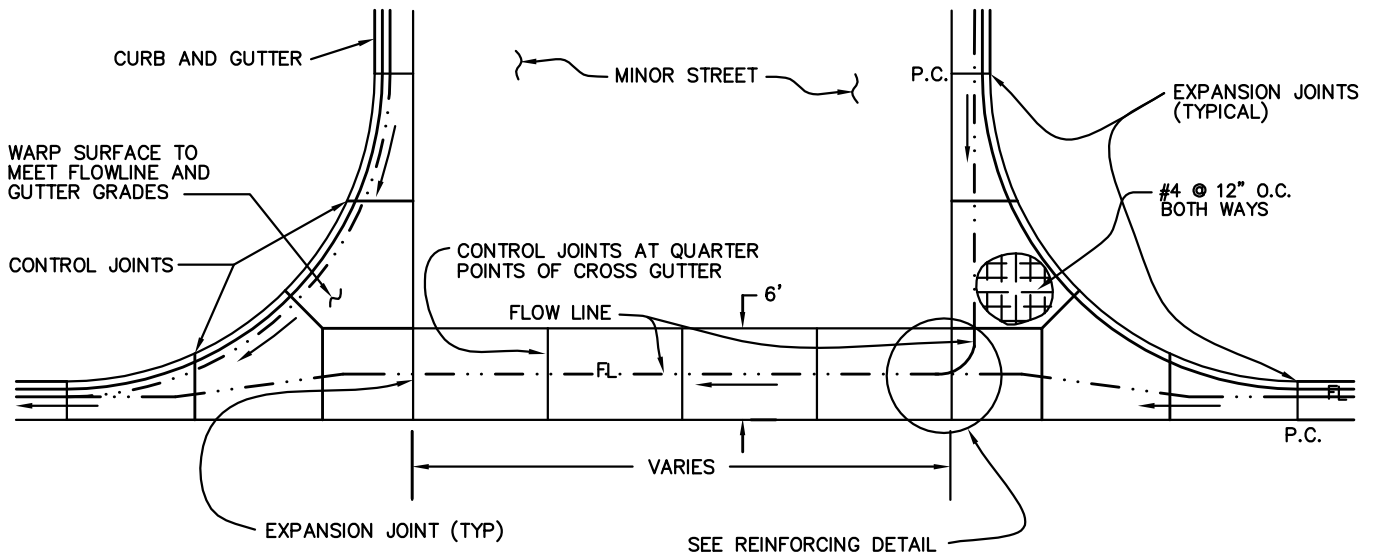
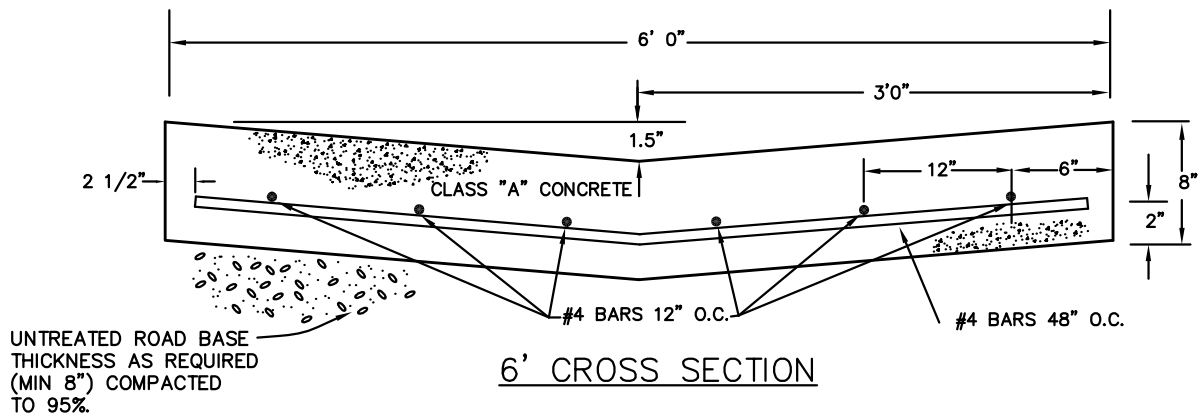
- 1) AREA BETWEEN EDGE OF ASPHALT AND PROPERTY LINE SHALL NOT BE PAVED EXCEPT AT DRIVES.
- 2) ALL DRAINAGE MUST SLOPE AWAY FROM PAVEMENT EDGE. DO NOT CHANNEL WATER ALONG ROADWAY EDGE.
- 3) OTHER EROSION CONTROL MATERIALS MAY BE USED UPON APPROVAL OF THE COUNTY REPRESENTATIVE.
- 4) 10' MINIMUM WIDE UTILITY EASEMENT REQUIRED OUTSIDE OF RIGHT OF WAY, BOTH SIDES OF STREET.

**WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT**

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD ROAD CROSS-SECTIONS  
WITH DITCHES

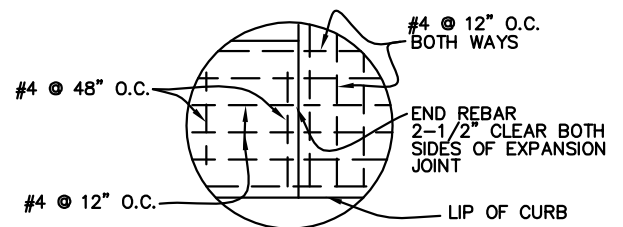
STANDARD DWG. NO.	
141	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



#### NOTES:

- 1- FOR USE ON RESIDENTIAL & COMMERCIAL STREETS.
- 2- CROSS GUTTERS ARE USED AT INTERSECTIONS ONLY UNLESS OTHERWISE APPROVED.
- 3- CROSS GUTTER SHALL CROSS THE MINOR STREET.
- 4- ALL REINFORCING STEEL SHALL HAVE 2-INCH MINIMUM CLEAR COVER. SUPPORT CHAIRS, BLOCKS OR OTHER APPROVED EQUAL SHALL BE USED TO RAISE STEEL OFF GROUND.
- 5- REINFORCING TO EXTEND TO LIMITS OF CROSS GUTTER.
- 6- ALL REINFORCING STEEL SHALL BE GRADE 60 ASTM A 615.

#### PLAN

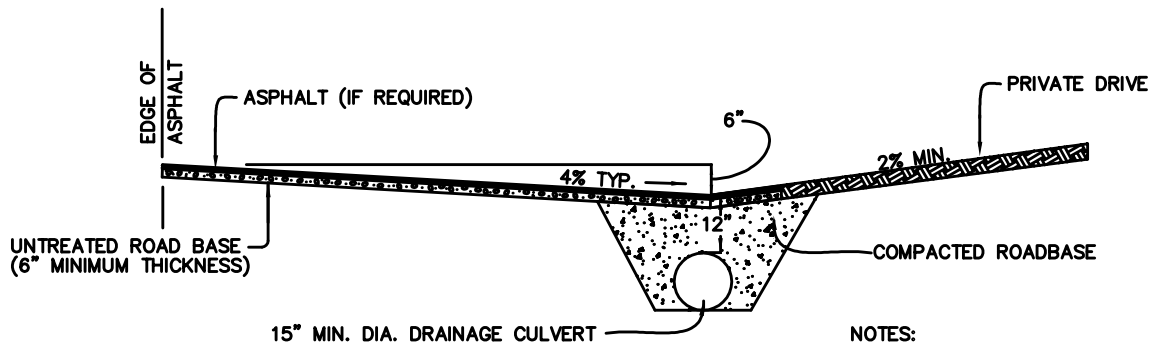


#### WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

#### STANDARD 6' CROSS GUTTER

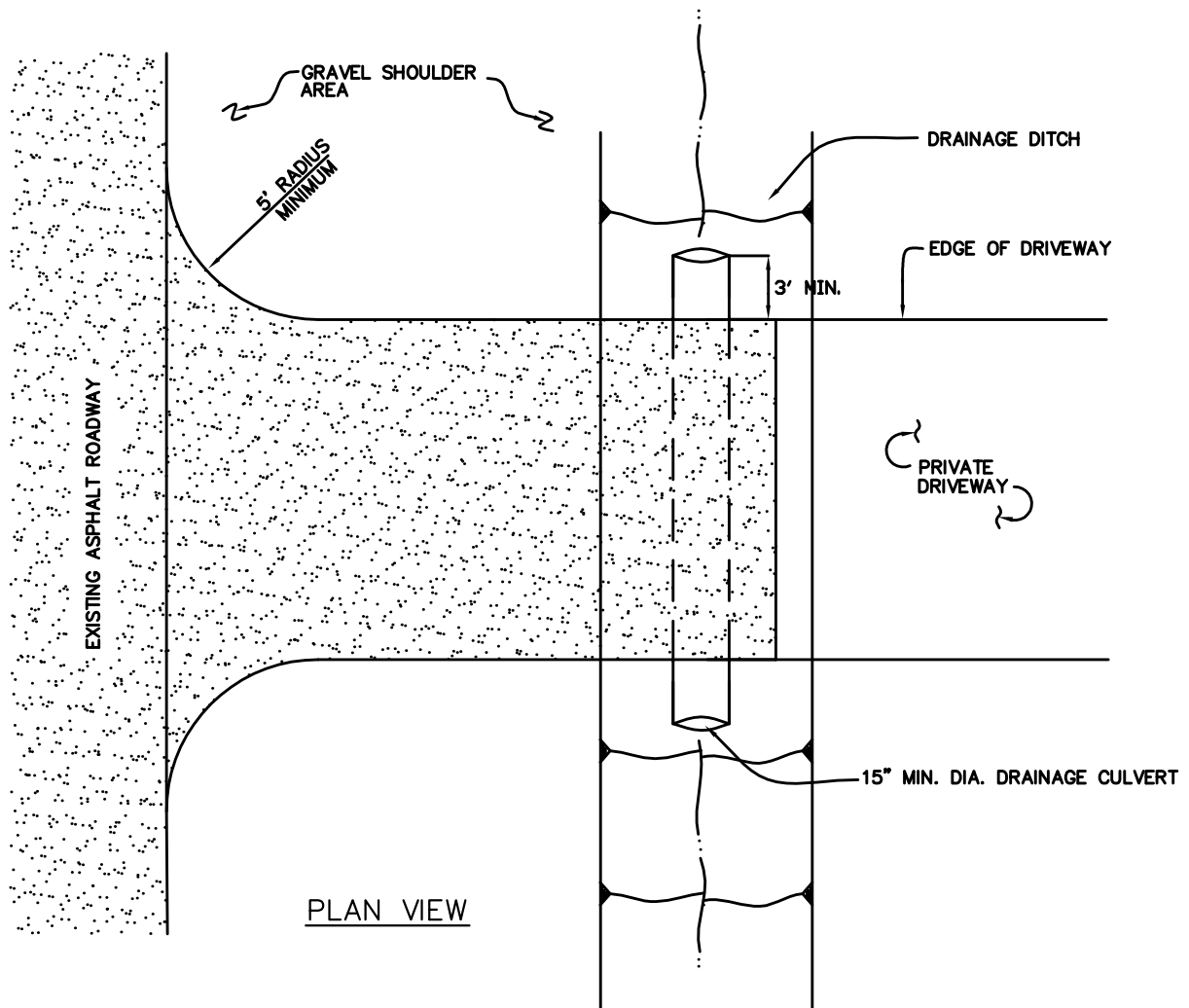
STANDARD DWG. NO.	
151	1 OF 1
APPROVED:	
DATE: MAY 2009 BY:	



NOTES:

- 1- ALL PIPE AND INSTALLATION TO MEET COUNTY STANDARDS.
- 2- CULVERT TO HAVE A MINIMUM SLOPE OF 0.75%.
- 3- DO NOT PAVE BETWEEN EDGE OF ASPHALT AND DRAINAGE DITCH EXCEPT AT DRIVEWAY.

SECTION AT DRIVEWAY ☐

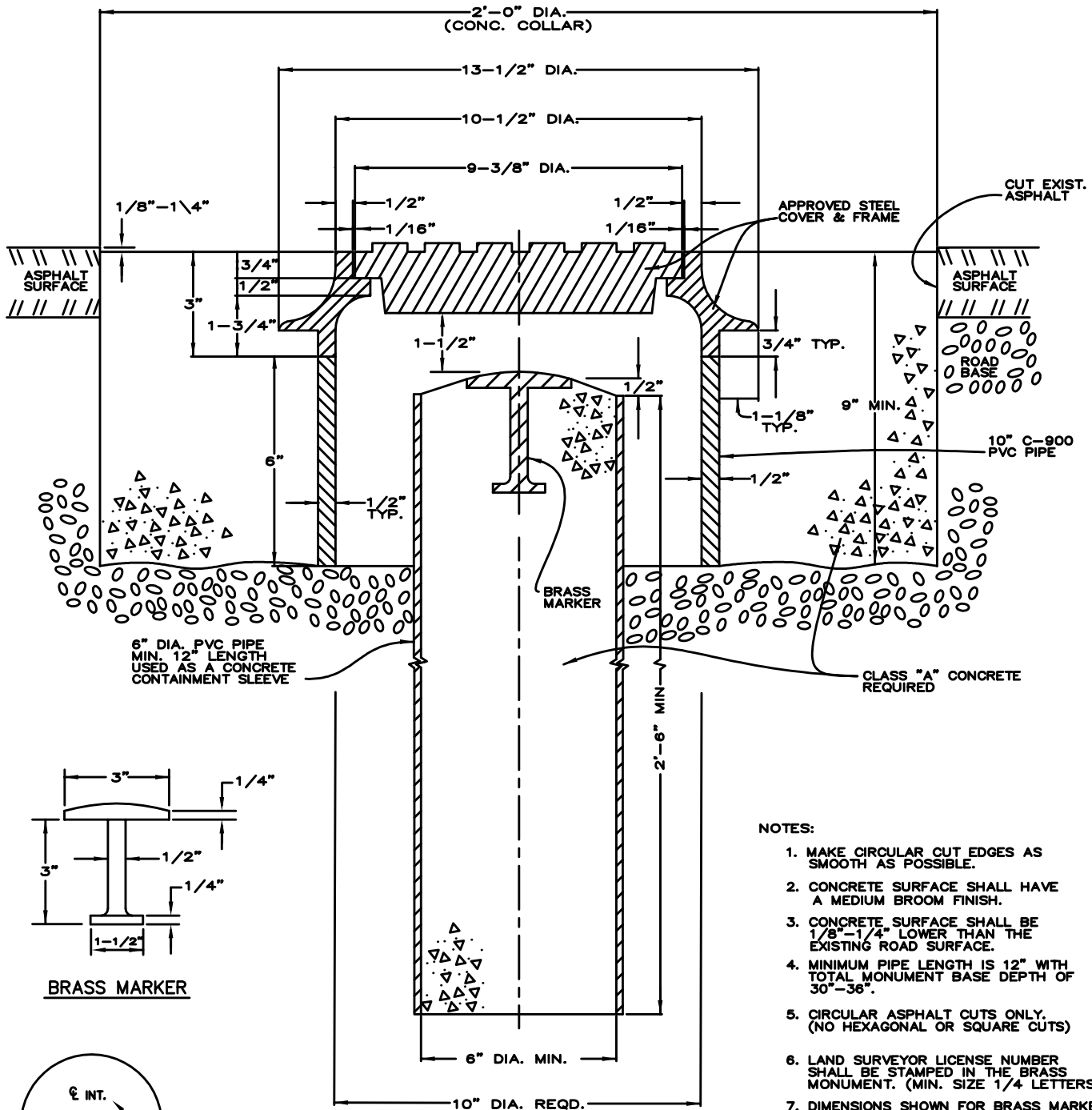


WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

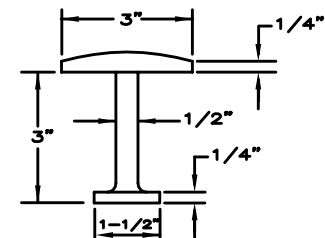
DRIVEWAY ACCESS DETAILS  
WITHOUT CURBING

STANDARD DWG. NO.	
152	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

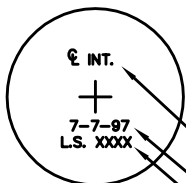


# NOTES:

1. MAKE CIRCULAR CUT EDGES AS SMOOTH AS POSSIBLE.
2. CONCRETE SURFACE SHALL HAVE A MEDIUM BROOM FINISH.
3. CONCRETE SURFACE SHALL BE 1/8"-1/4" LOWER THAN THE EXISTING ROAD SURFACE.
4. MINIMUM PIPE LENGTH IS 12" WITH TOTAL MONUMENT BASE DEPTH OF 30"-36".
5. CIRCULAR ASPHALT CUTS ONLY. (NO HEXAGONAL OR SQUARE CUTS)
6. LAND SURVEYOR LICENSE NUMBER SHALL BE STAMPED IN THE BRASS MONUMENT. (MIN. SIZE 1/4" LETTERS)
7. DIMENSIONS SHOWN FOR BRASS MARKER ARE THE MINIMUM.
8. SEE COUNTY SURVEYOR FOR LIST OF COMMONLY USED ABBREVIATIONS.



BRASS MARKER



CAP PLAN

ABBREVIATIONS, SEE NOTE #7

DATE CAP IS MARKED.

LICENSE NO. OF LAND SURVEYOR MARKING CAP.

## WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

## CLASS I STANDARD MONUMENT DETAILS

## STANDARD DWG. NO.

160 1 OF 1

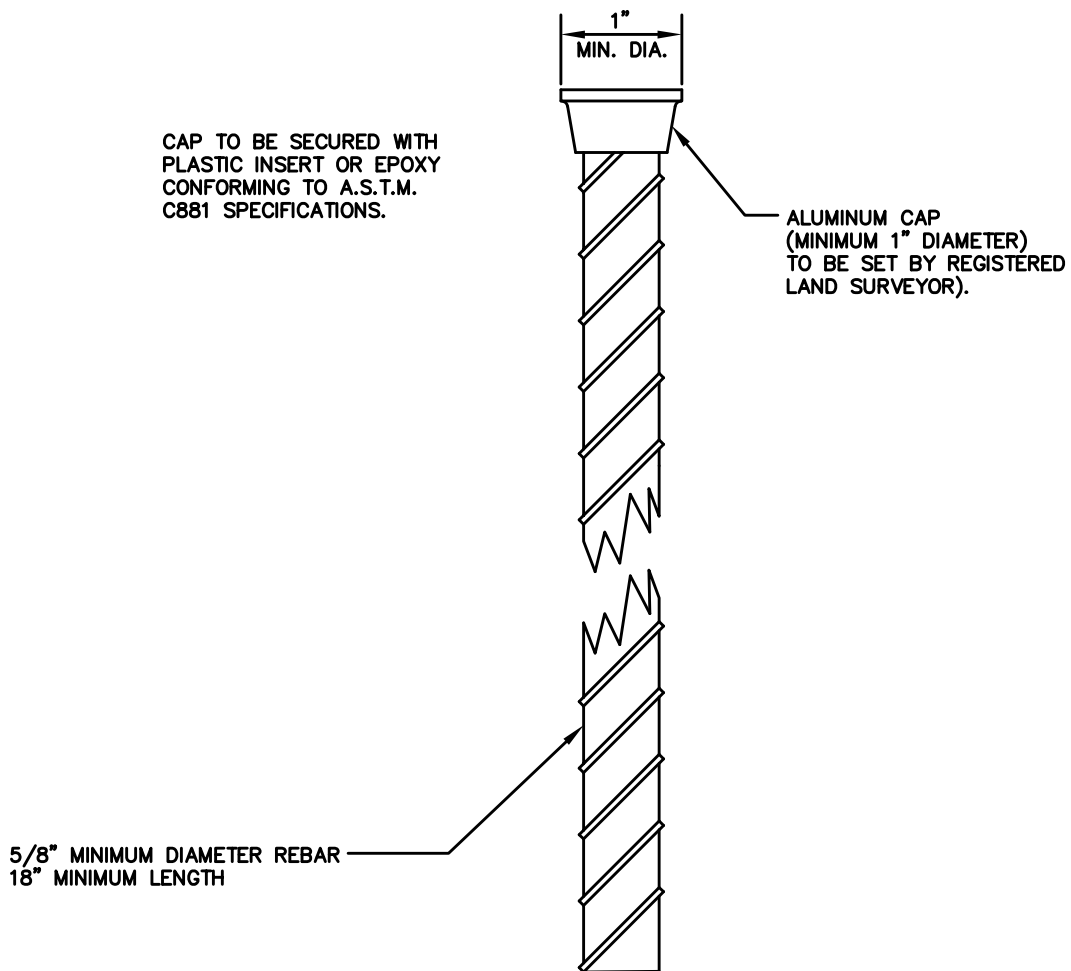
APPROVED:

DATE: MAY 2009 BY:

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DATE	DESCRIPTION	BY

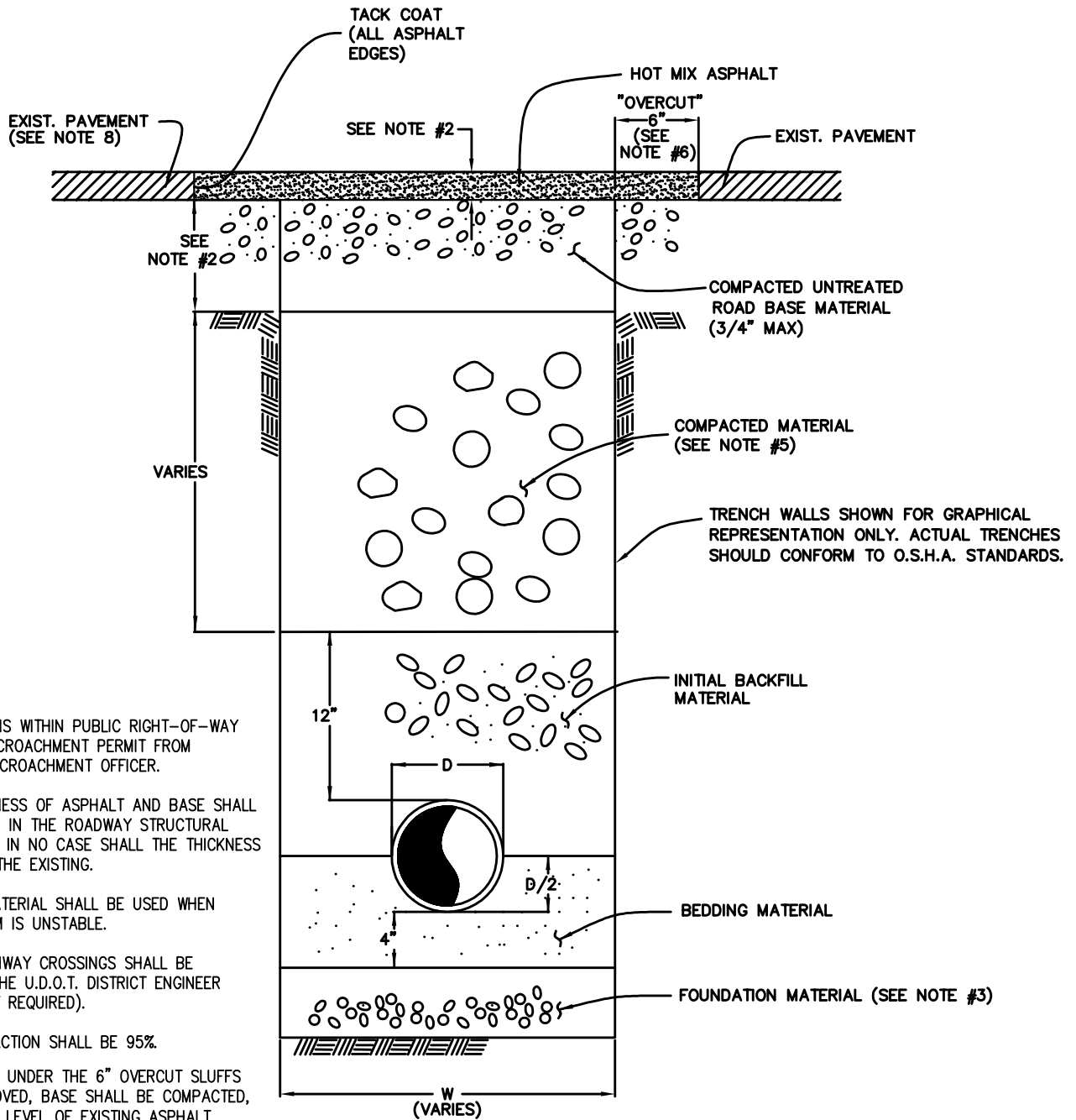
NOTES:

- 1- TYPE II MONUMENTS TO BE SET AT ALL CENTERLINE CONTROL POINTS NOT OTHERWISE IDENTIFIED BY A TYPE I MONUMENT AND AS REQUIRED BY THE COUNTY SURVEYOR.
- 2- THE REGISTERED LAND SURVEYOR'S NUMBER, AND A PUNCH MARK ARE TO APPEAR ON THE SURFACE OF THE CAP.
- 3- ALUMINUM CAP SHALL BE SET FLUSH WITH SURFACE OF ROAD.



TYPE II MONUMENT

REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	CLASS II MONUMENT		161	1 OF 1
					APPROVED:	
					DATE: MAY 2009	BY:



NOTES:

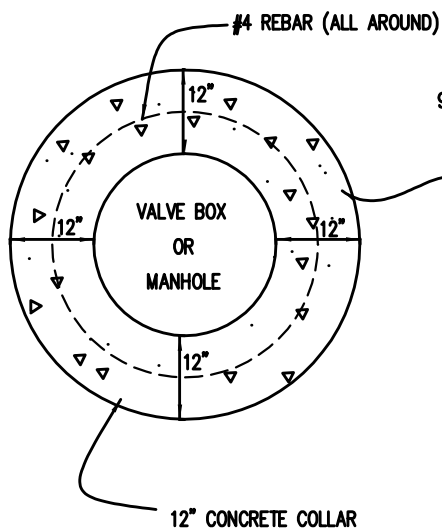
- 1- ALL EXCAVATIONS WITHIN PUBLIC RIGHT-OF-WAY REQUIRE AN ENCROACHMENT PERMIT FROM THE COUNTY ENCROACHMENT OFFICER.
- 2- MINIMUM THICKNESS OF ASPHALT AND BASE SHALL BE AS OUTLINED IN THE ROADWAY STRUCTURAL REQUIREMENTS. IN NO CASE SHALL THE THICKNESS BE LESS THAN THE EXISTING.
- 3- FOUNDATION MATERIAL SHALL BE USED WHEN TRENCH BOTTOM IS UNSTABLE.
- 4- ALL STATE HIGHWAY CROSSINGS SHALL BE APPROVED BY THE U.D.O.T. DISTRICT ENGINEER (U.D.O.T. PERMIT REQUIRED).
- 5- MINIMUM COMPACTION SHALL BE 95%.
- 6- WHEN MATERIAL UNDER THE 6" OVERCUT SLUFFS OFF OR IS REMOVED, BASE SHALL BE COMPACTED, TO THE BOTTOM LEVEL OF EXISTING ASPHALT. AN ADDITIONAL 6" IN WIDTH OF ASPHALT SHALL BE CUT, REMOVED AND REPLACED AS PART OF THE OVERALL PATCH.
- 7- WHERE ROAD SECTION HAS A DESIGNED GRANULAR SUB-BASE, IT SHALL BE REPLACED IN KIND OR WITH ROAD BASE GRAVEL.
- 8- IN GENERAL, STREET SURFACES LESS THAN 24 MONTHS OLD WILL NOT BE CUT! IF A CUT MUST BE MADE, ADDITIONAL, STRICTER REQUIREMENTS MAY BE INVOKED. SEE ENCROACHMENT OFFICER.
- 9- 24 HOUR NOTICE REQUIRED ON ALL INSPECTIONS.
- 10- ALL TRENCH BACKFILL SHALL MEET MIN. COMPACTION REQUIREMENTS.
- 11- EXCLUDING EMERGENCY CLOSURES ALL ROAD CLOSURES AND DETOURS REQUIRE 48 HOURS PRIOR NOTICE.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

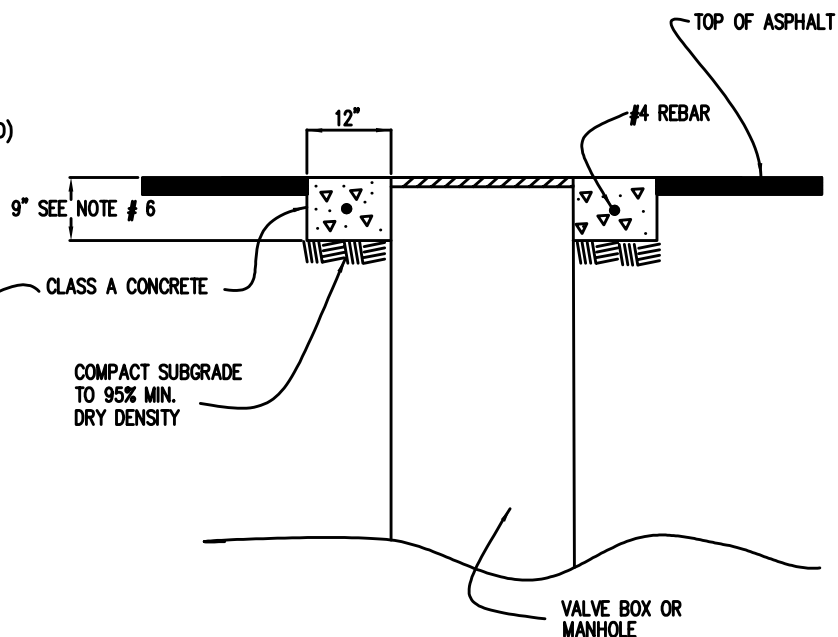
REVISIONS		
DATE	DESCRIPTION	BY

TRENCH BACKFILL AND REPAIR DETAIL

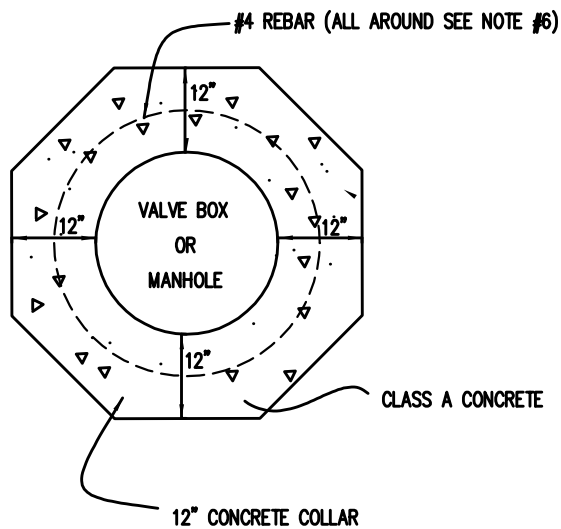
STANDARD DWG. NO.	
170	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



PLAN



SECTION



PLAN  
OPTIONAL

NOTES:

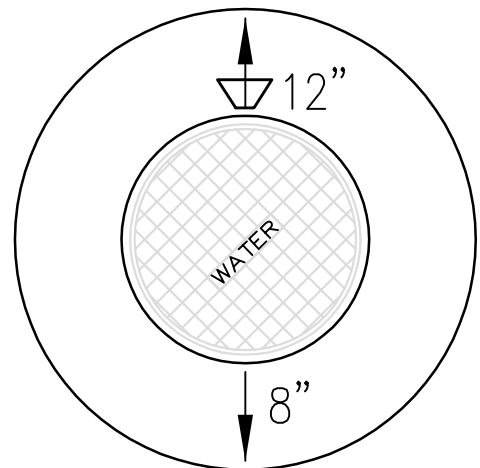
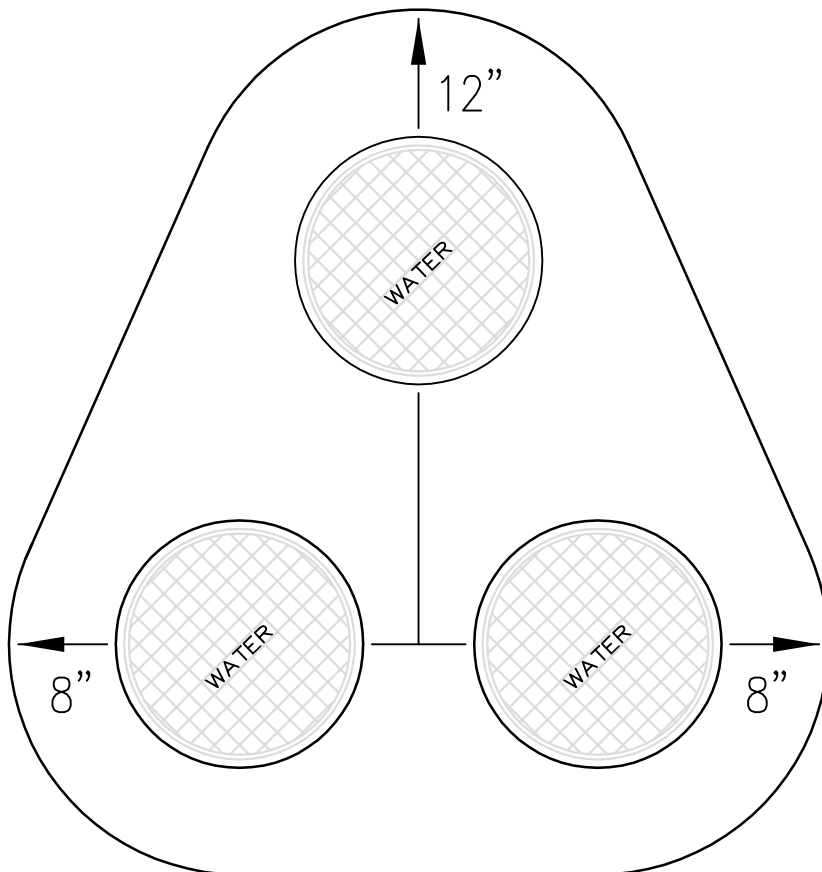
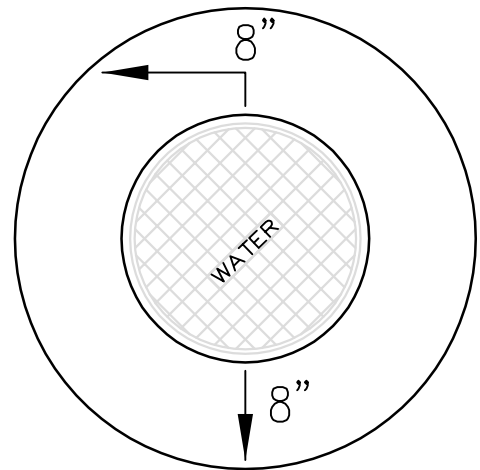
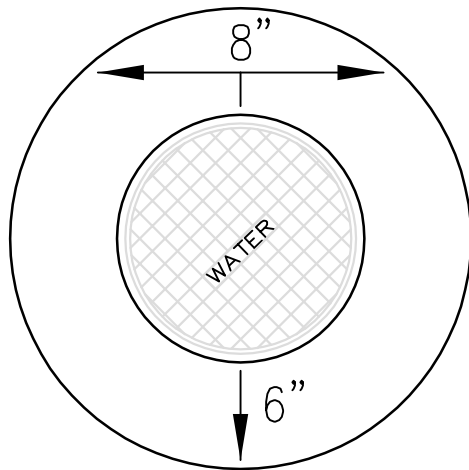
- 1- MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL BE ADJUSTED TO GRADE AFTER PAVING IS COMPLETE.
- 2- THE SURFACE OF THE ADJUSTED RING SHALL MATCH THE GRADE OF THE CONCRETE COLLAR. CONCRETE COLLAR SHALL BE 1/8" - 1/4" LOWER THAN ASPHALT.
- 3- ASPHALT SHALL BE CUT IN STRAIGHT VERTICAL LINES.
- 4- ADJUSTMENTS TO GRADE SHALL BE MADE WITH STANDARD RINGS OR EXTENTIONS OR AS APPROVED BY THE COUNTY REPRESENTATIVE.
- 5- ALL MANHOLES, VALVE BOXES AND OTHER SIMILAR ITEMS SHALL HAVE CONCRETE COLLAR AS REQUIRED UNLESS OTHERWISE APPROVED.
- 6- 9" THICK COLLARS SHALL BE REINFORCED.  
12" THICK COLLARS DO NOT REQUIRE REINFORCEMENT.
- 7- MARK CONCRETE COLLAR ON WATER VALVE BOXES WITH ARROW INDICATING DIRECTION OF FLOW.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

MANHOLES & VALVE BOXES  
CONCRETE COLLAR

STANDARD DWG. NO.	
171	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



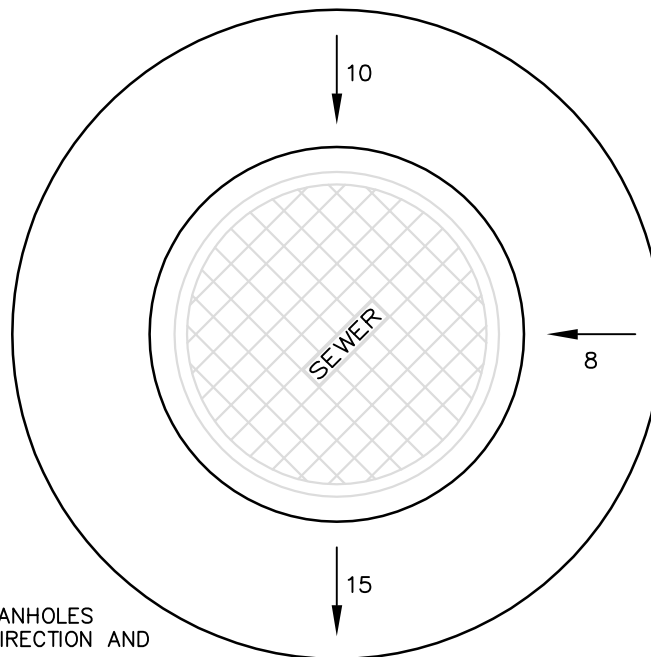
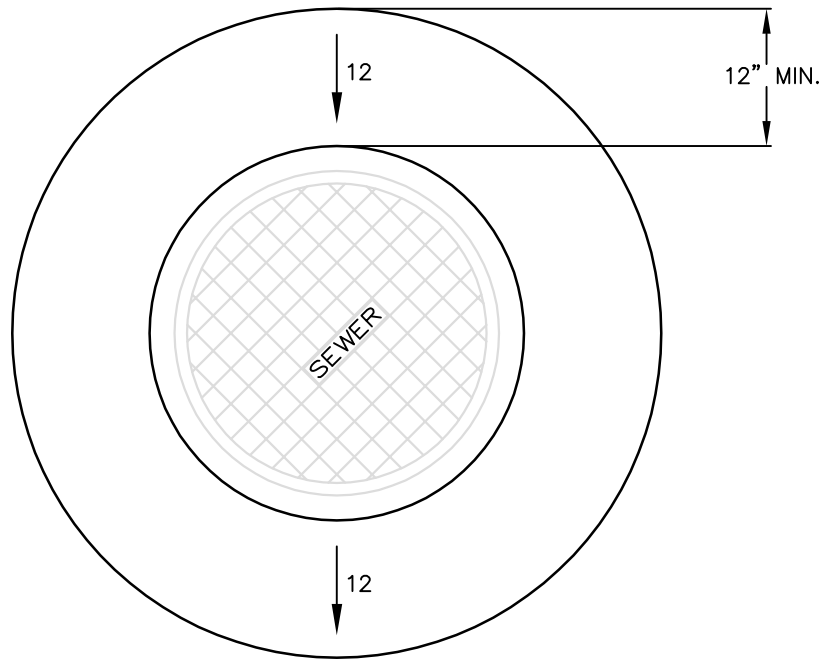
**NOTE:**  
WATER VALVE COLLARS SHALL BE  
ENGRAVED WITH A SCHEMATIC OF  
FITTINGS AND PIPE SIZES

# WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

WATER VALVE COLLAR ENGRAVINGS

STANDARD DWG. NO.	
172	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



**NOTE:**

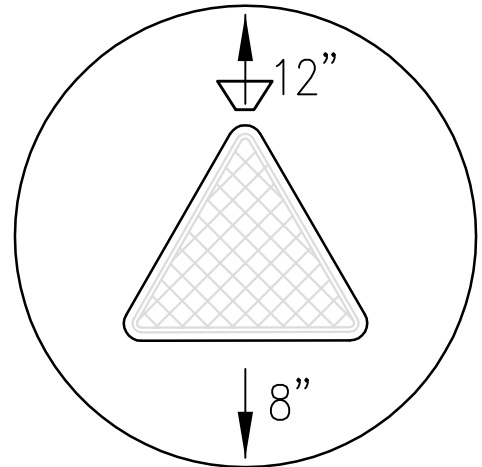
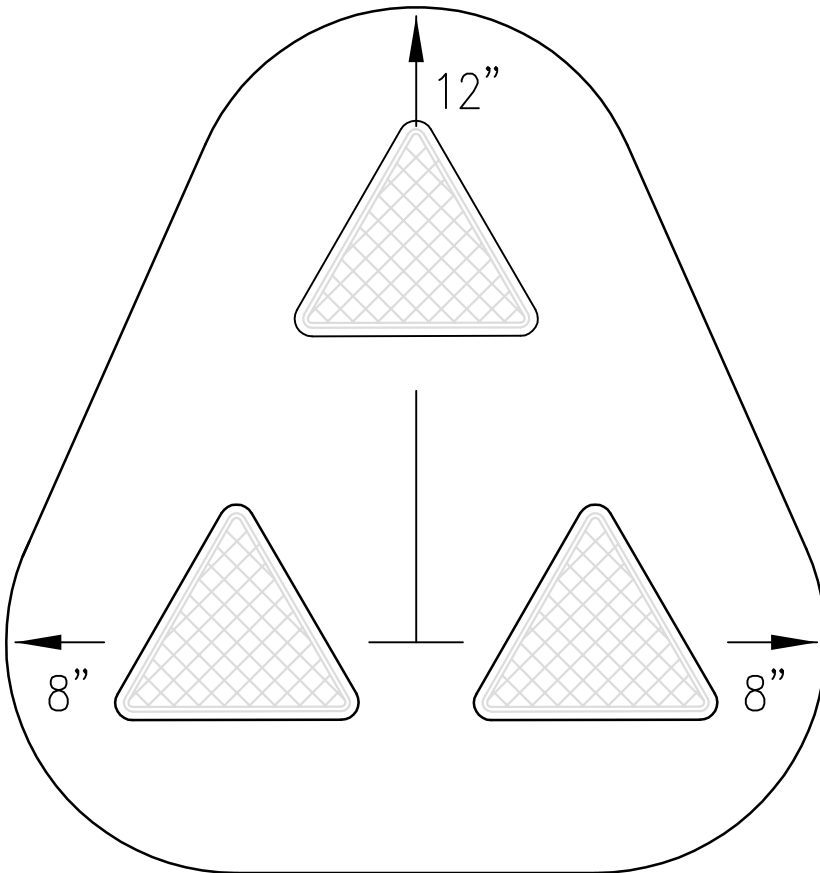
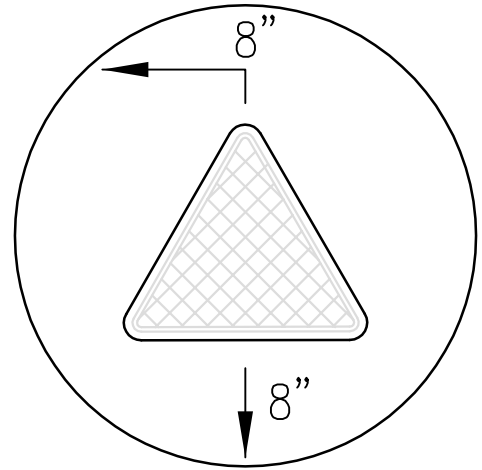
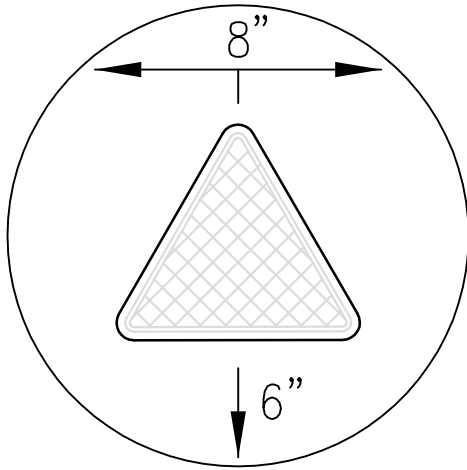
CONCRETE COLLARS FOR SEWER MANHOLES SHALL BE ENGRAVED WITH FLOW DIRECTION AND SIZE OF PIPE.

**WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT**

REVISIONS		
DATE	DESCRIPTION	BY

SEWER MANHOLE COLLAR ENGRAVINGS

STANDARD DWG. NO.	
173	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



**NOTE:**  
IRRIGATION VALVE COLLARS SHALL BE  
ENGRAVED WITH A SCHEMATIC OF  
FITTINGS AND PIPE SIZES

# WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

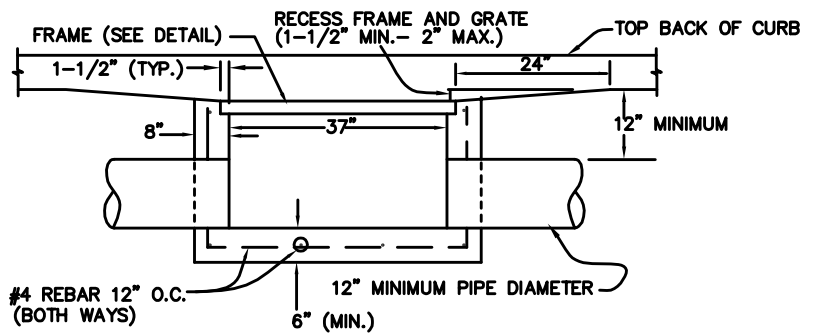
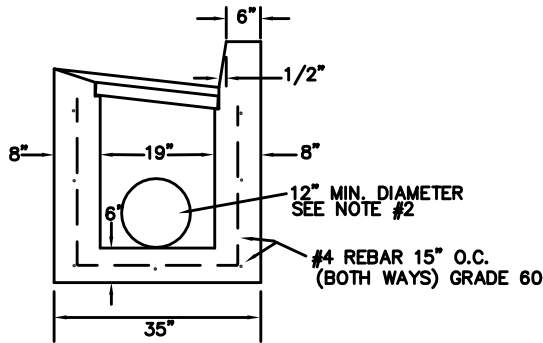
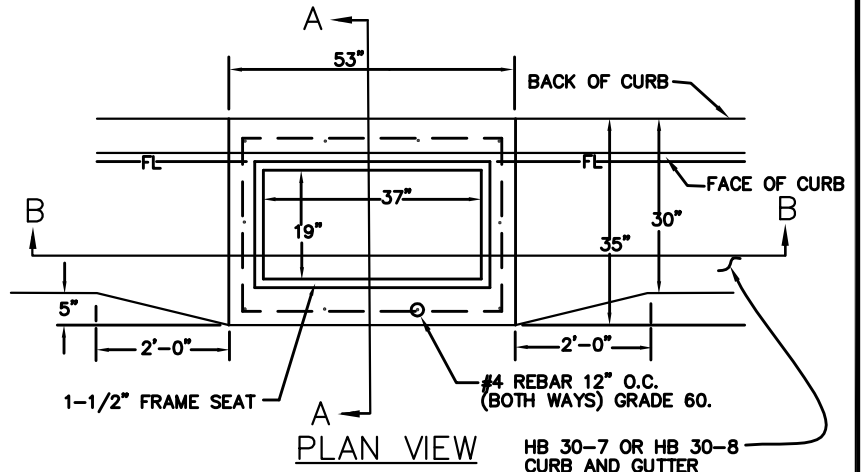
REVISIONS		
DATE	DESCRIPTION	BY

## IRRIGATION VALVE COLLAR ENGRAVINGS

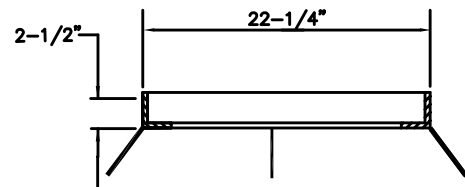
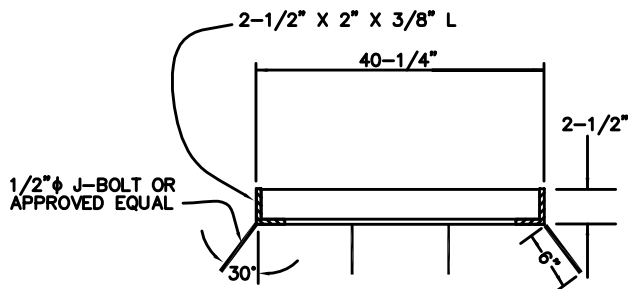
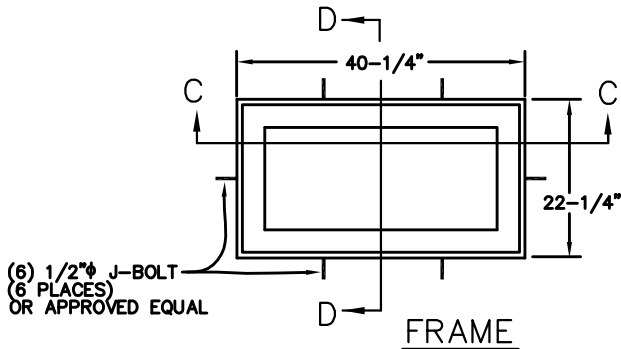
STANDARD DWG. NO.	
174	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE

**NOTES:**

- 1- USE BICYCLE SAFE GRATE ONLY UNLESS OTHERWISE APPROVED. SEE STANDARD DRAWING.
- 2- BOXES WITH PIPE SIZE GREATER THAN 15" DIAMETER AND BOXES GREATER THAN 4' IN DEPTH REQUIRE ENGINEERED DESIGN.
- 3- GRATES & FRAMES SHALL BE PAINTED WITH ONE COAT PRIMER AND ONE COAT LIGHT GREY FINISH. COATING APPLIED PER SPECIFICATIONS.



LONG DIMENSION OF BOX SHALL BE PARALLEL TO THE CURB & GUTTER.



NO SCALE

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

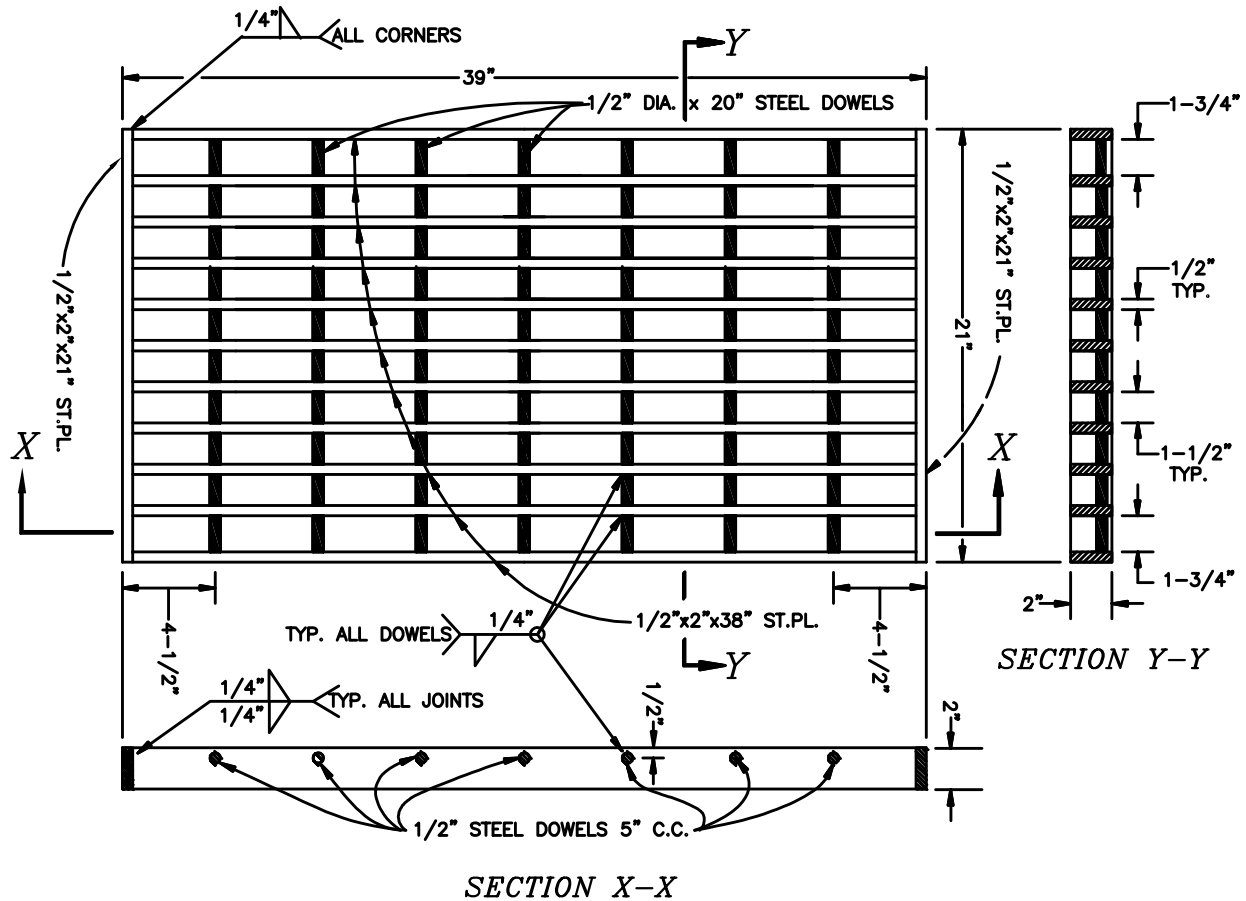
REVISIONS		
DATE	DESCRIPTION	BY

STANDARD CATCH BASIN  
BOX & FRAME

STANDARD DWG. NO.	
200	1 OF 1
APPROVED:	
DATE: MAY 2009 BY:	

NOTES:

1. USE ONLY GRADE 60 STEEL
2. PAINT ALL SURFACES OF GRATE. APPLY ONE COAT OF PRIMER , AND ONE FINISH COAT, (LIGHT GREY COLOR)

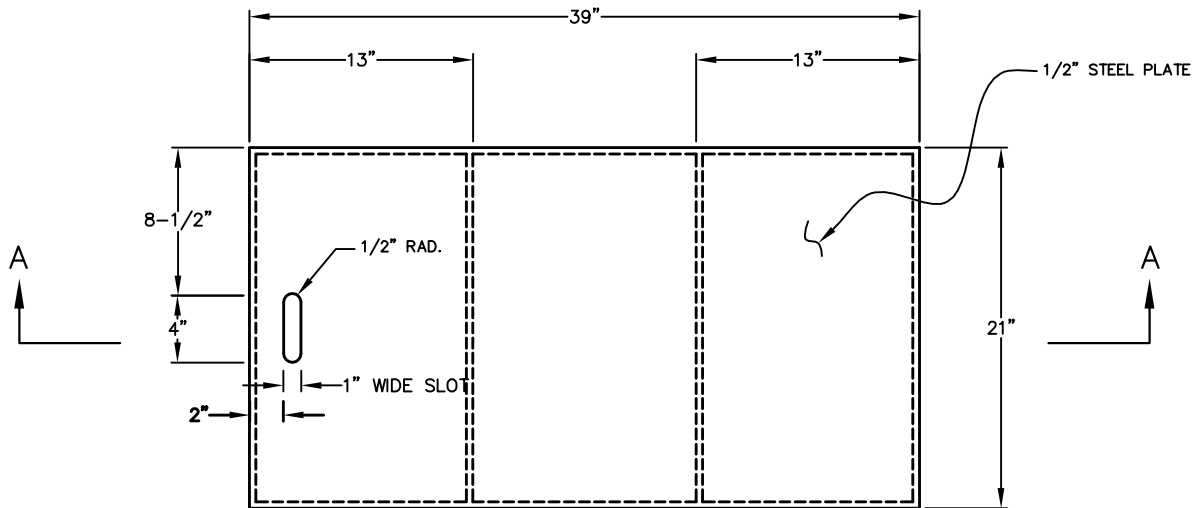


WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

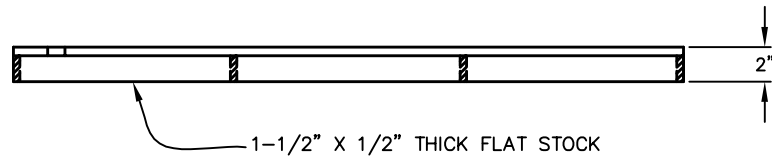
STANDARD CATCH BASIN GRATE  
(BICYCLE SAFE)

STANDARD DWG. NO.	
202	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



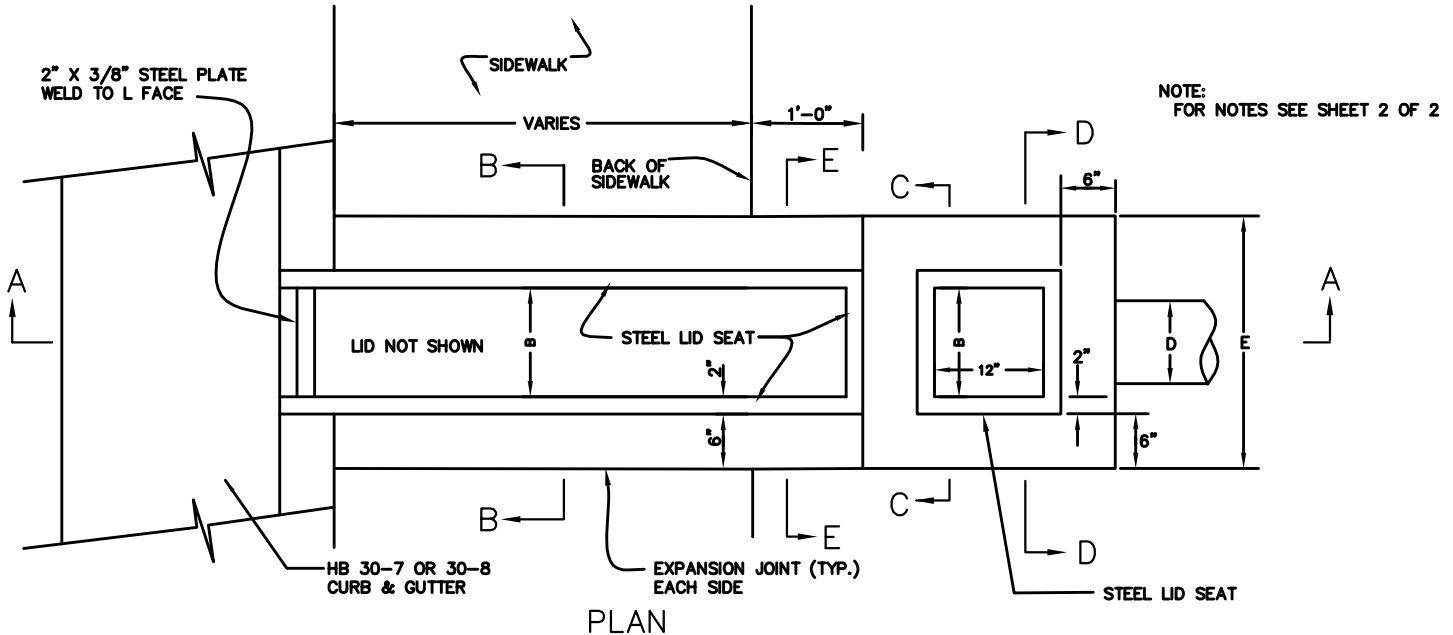
NOTES:

- 1- FINISH SHALL BE ONE COAT PRIMER,  
ONE FINISH COAT, LIGHT GRAY ENAMEL.
- 2- LID SHALL BE ALL WELDED CONSTRUCTION.
- 3- FOR USE IN NON-TRAFFIC INSTALLATIONS.
- 4- LID SHALL BE DIAMOND PLATE STEEL.

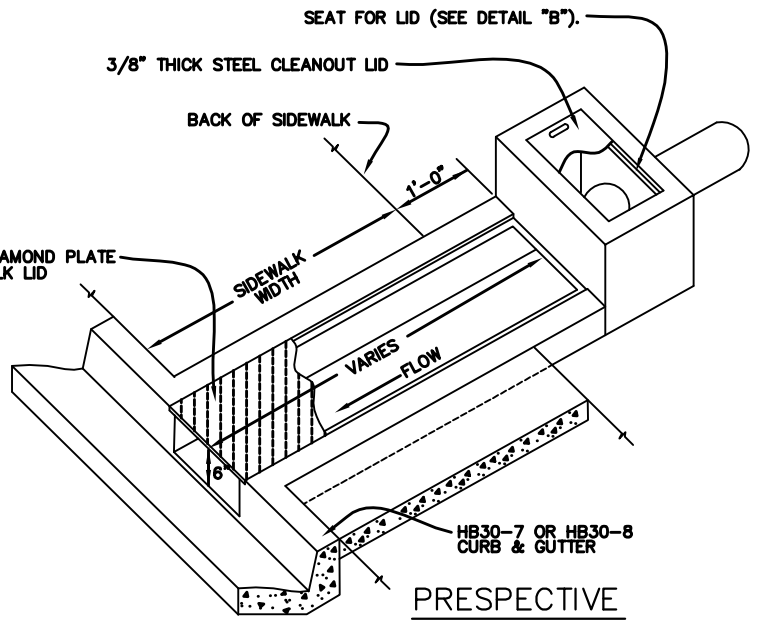
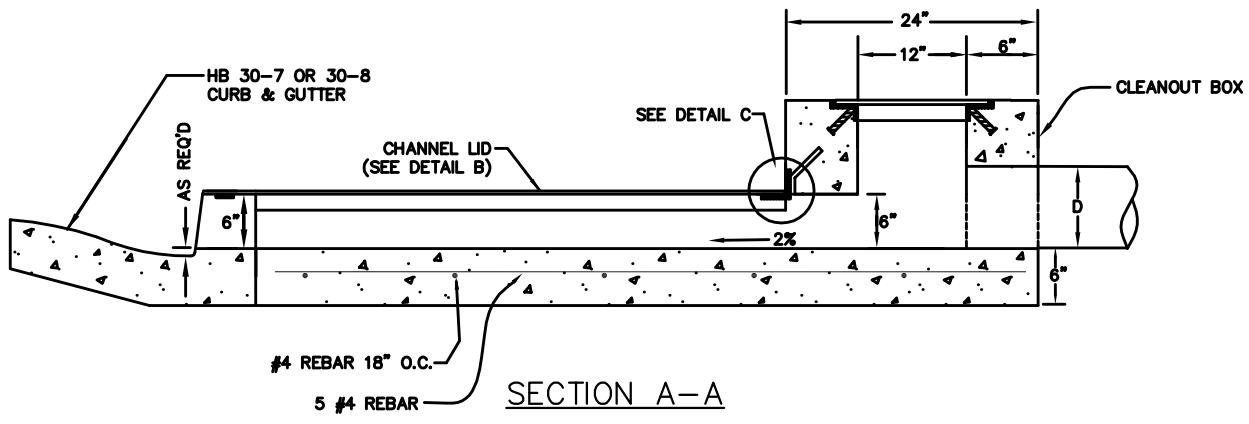


SECTION A-A

REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	39" SOLID LID DETAILS		203	1 OF 1
					APPROVED:	
					DATE: MAY 2009	BY:



NOTE:  
FOR NOTES SEE SHEET 2 OF 2



MARK	DIMENSION (INCHES)				COMMENTS
B	10	15	20	30*	INSIDE WIDTH
C	20	22	24	27	CLEANOUT BOX HEIGHT
D	48	10	12	15	INLET PIPE
E	22	27	32	42	BOX WIDTH
K	18	23	28	38	STEEL END SUPPORT

DIMENSION TABLE

\*REQUIRES ENGINEERED DESIGN FOR LID & BOX.

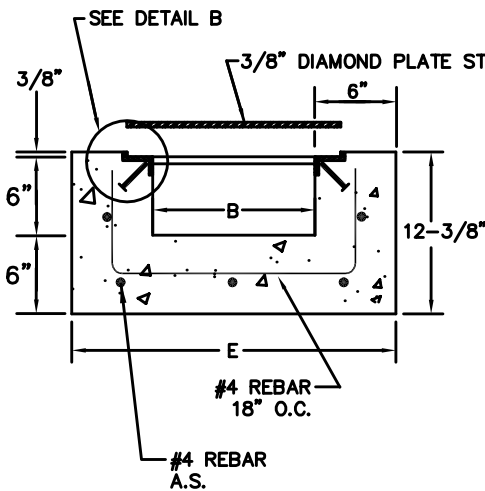
WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

SIDEWALK DRAINAGE STRUCTURE

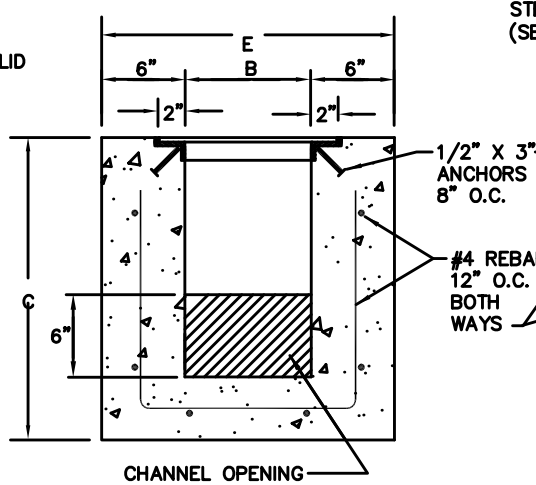
STANDARD DWG. NO.  
204A 1 OF 2  
APPROVED:  
DATE: MAY 2009 BY:

REVISIONS		
DATE	DESCRIPTION	BY

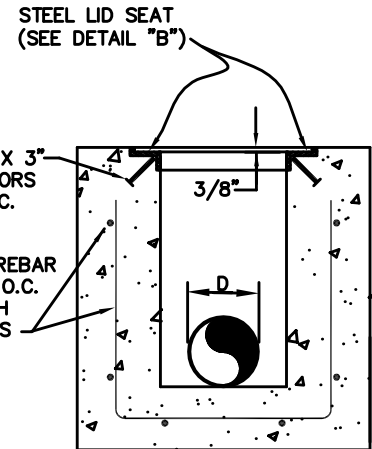
NOTE:  
STEEL LID TO BE FLUSH  
WITH CONCRETE SIDEWALK.



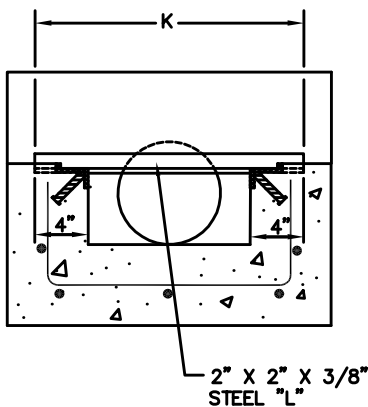
SECTION B-B



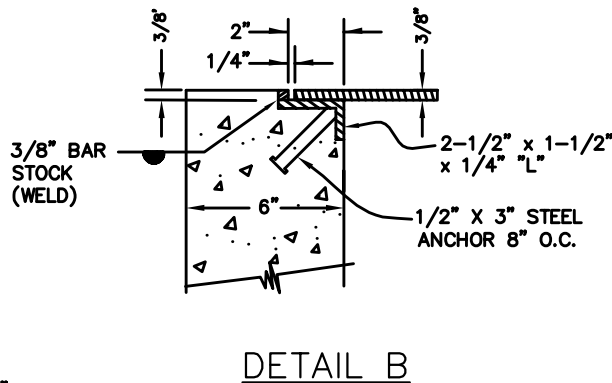
SECTION C-C



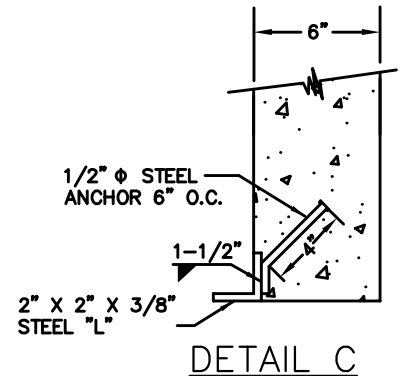
SECTION D-D



SECTION E-E



DETAIL B



DETAIL C

MARK	DIMENSION (INCHES)				COMMENTS
B	10	15	20	30*	INSIDE WIDTH
C	20	22	24	27	CLEANOUT BOX HEIGHT
D	≤ 8	10	12	15	INLET PIPE
E	22	27	32	42	BOX WIDTH
K	18	23	28	38	STEEL END SUPPORT

DIMENSION TABLE

\*REQUIRES ENGINEERED DESIGN FOR LID & BOX.

NOTES:

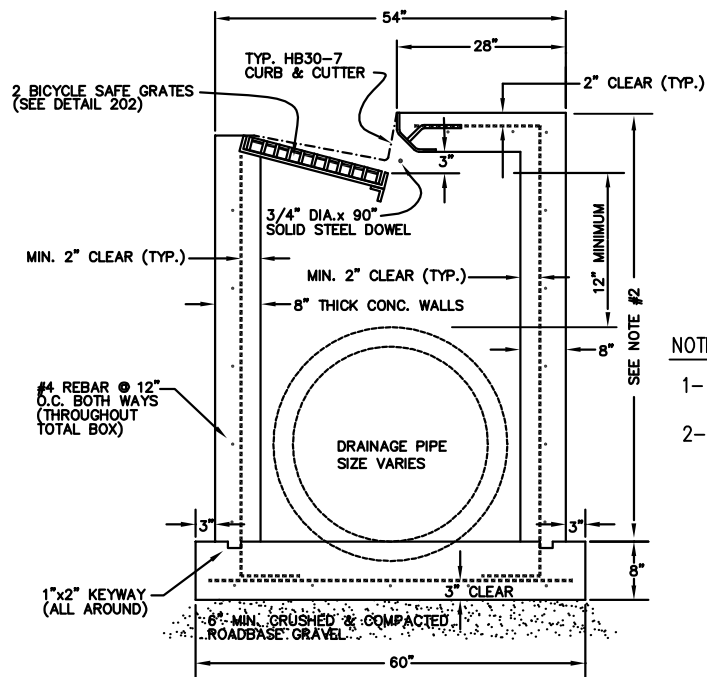
- 1- ALL REBAR SHALL HAVE 2" MIN. CLEAR.
- 2- STEEL LID SHALL BE FLUSH WITH CONCRETE.
- 3- BOX DIMENSIONS BASED UPON INLET PIPE SIZE "D".
- 4- ALL STEEL SHALL BE GRADE 60.
- 5- LID FOR CLEANOUT BOX SHALL HAVE 1-4 INCH X 1" SLOT FOR LIFTING. LID MAY BE SMOOTH OR DIAMOND PLATE STEEL.
- 6- SIDEWALK LID SHALL BE DIAMOND PLATE STEEL.
- 7- STANDARD REBAR SHALL NOT BE USED FOR STEEL ANCHORS.
- 8- ALL EXTERIOR EDGES OF CLEANOUT BOX TO HAVE 3/4" TO 1" CHAMFER (NOT SHOWN IN DETAILS FOR CLARITY).
- 9- STEEL LIDS AND SEAT TO BE PAINTED GREY

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

SIDEWALK DRAINAGE STRUCTURE

STANDARD DWG. NO.	
204B	2 OF 2
APPROVED:	
DATE: MAY 2009	BY:



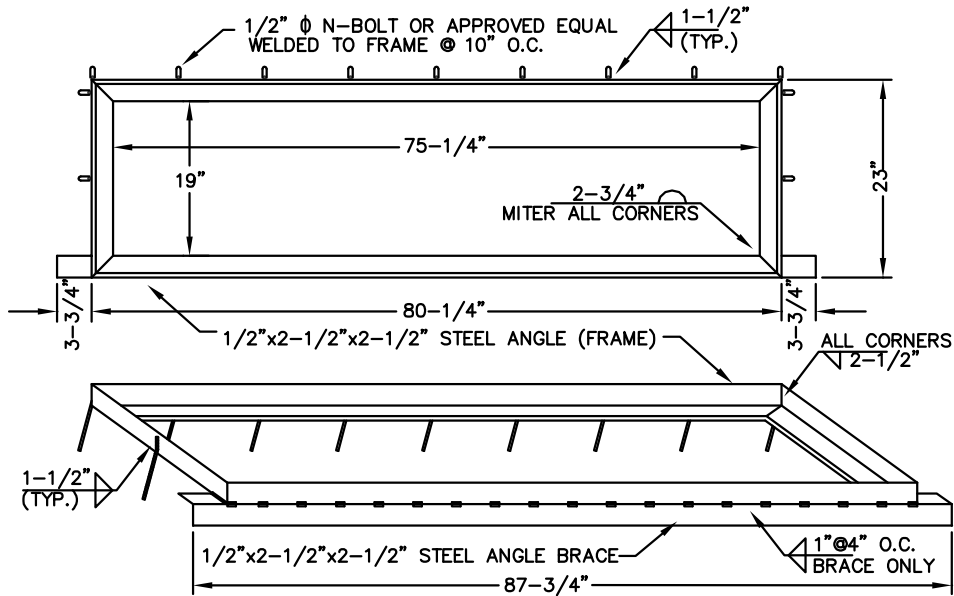
NOTES:

- 1- USE BICYCLE SAFE GRATES ONLY.
- 2- FOR PIPE SIZE GREATER THAN 42" DIAMETER AND 60" DEPTH ENGINEERED DESIGN REQUIRED.

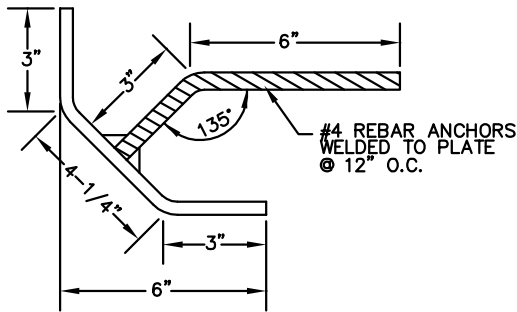
SECTION A-A

			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT			
REVISIONS			CURB INLET DOUBLE CATCH BASIN BOX		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY			205A	1 OF 2
					APPROVED:	
					DATE: MAY 2009 BY:	

PLAN VIEW



## FRAME & SUPPORT BRACE

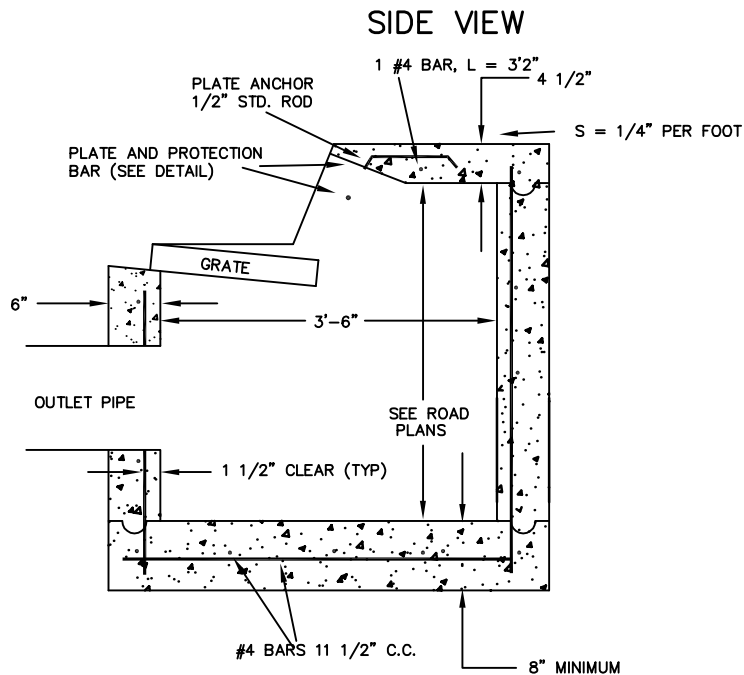
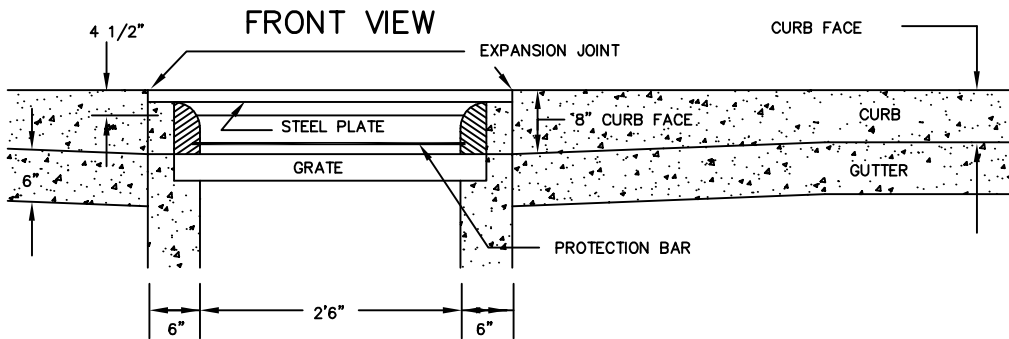
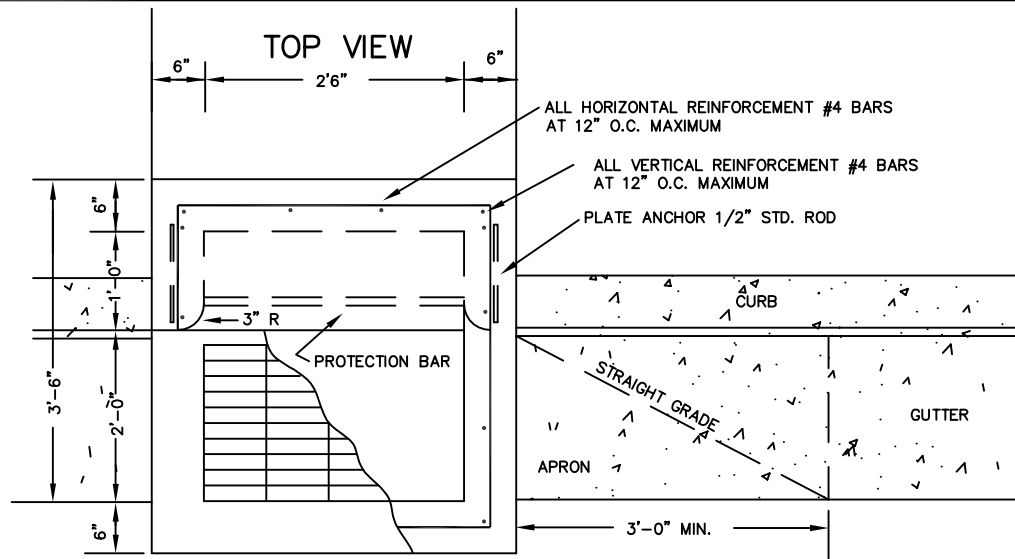


## STEEL SUPPORT

NOTES:

1. FRAME SHALL BE PAINTED WITH ONE COAT PRIMER AND ONE COAT LIGHT GREY FINISH.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT				
REVISIONS			STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	205B	2 OF 2
			APPROVED:	
			DATE: MAY 2009	BY:
	</			



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

CURB INLET SINGLE CATCH BASIN BOX

STANDARD DWG. NO.	
206A	1 OF 2
APPROVED:	
DATE: MAY 2009	BY: TE

Technical drawing of a rectangular frame assembly. The drawing shows a central grid of 6 spaces by 5 5/8" (6 SPACES  $\times$  5 5/8"). The overall dimensions are 3'0" wide and 1'5 5/8" high. The drawing includes labels for various components and dimensions:

- Dimensions:**
  - Overall width: 3'0"
  - Overall height: 1'5 5/8"
  - Grid width: 6 SPACES  $\times$  5 5/8"
  - Grid height: 5 5/8"
  - Bottom bar anchor offset: 5/8"
- Components and Labels:**
  - 1/2" FRAME BAR WELDED TO FRAME ANGLE:** Points to the top horizontal bar.
  - 3 1/2" X 3" X 3/8" FRAME ANGLE WELDED TO LONGITUDENAL FRAMES:** Points to the right vertical frame angle.
  - 3 1/2" X 3" X 5/8" FRAME ANGLE:** Points to the bottom right corner frame angle.
  - 1/4" FILLET WELD (TYP):** Points to the weld connecting the bottom bar anchor to the frame.
  - BAR ANCHOR:** Points to the bottom horizontal bar.
  - Labels E and D:** Indicate specific points or features on the frame.

Diagram illustrating the cross-section of a reinforced concrete slab with dimensions and reinforcement details:

- Overall width: 3'0"
- Width of main reinforcement area: 2'10 1/2"
- Width of main reinforcement area (excluding frame bars): 2'9 3/4"
- Frame bars: 3" X 3/8" FRAME BAR
- Main bars: 3" X 3/8" MAIN BARS
- Spacer bars: 1" X 3/8" SPACER BARS WELDED TO MAIN BARS
- Width of main reinforcement area (excluding frame bars and spacer bars): 2'6"
- Width of main reinforcement area (excluding frame bars and spacer bars) (bottom view): 6"

3"

1'4 7/8"

13 BARS  $\phi$  1/4" = 1'4 1/2"

1 3/8"

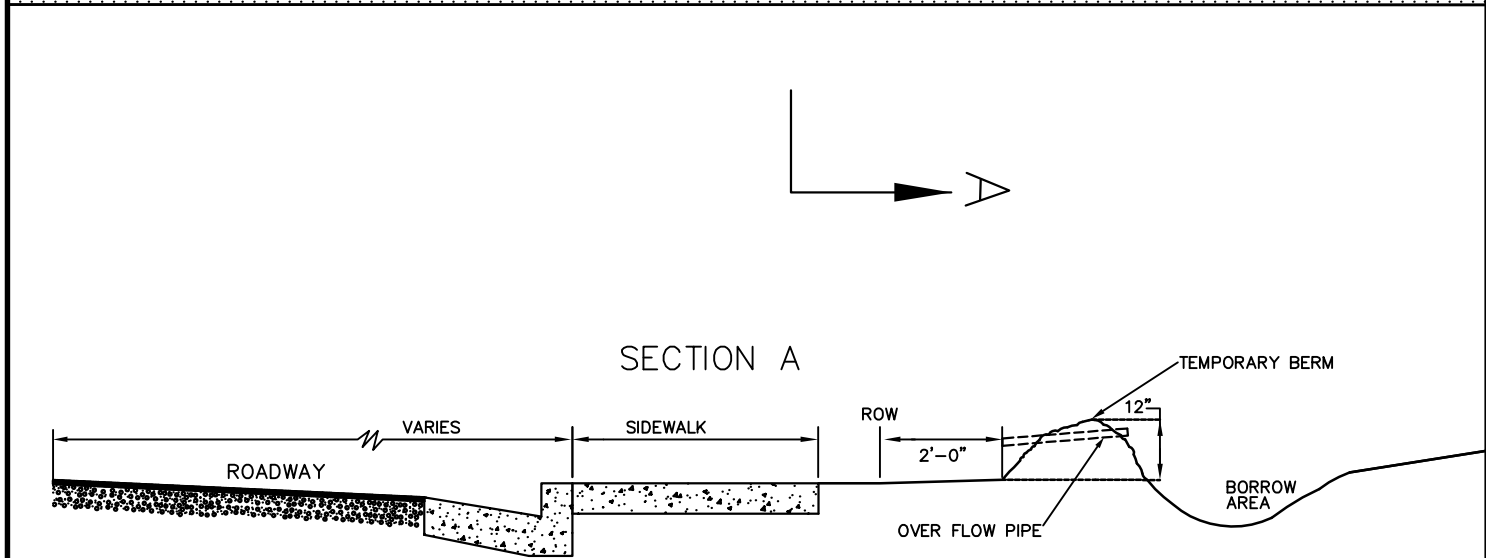
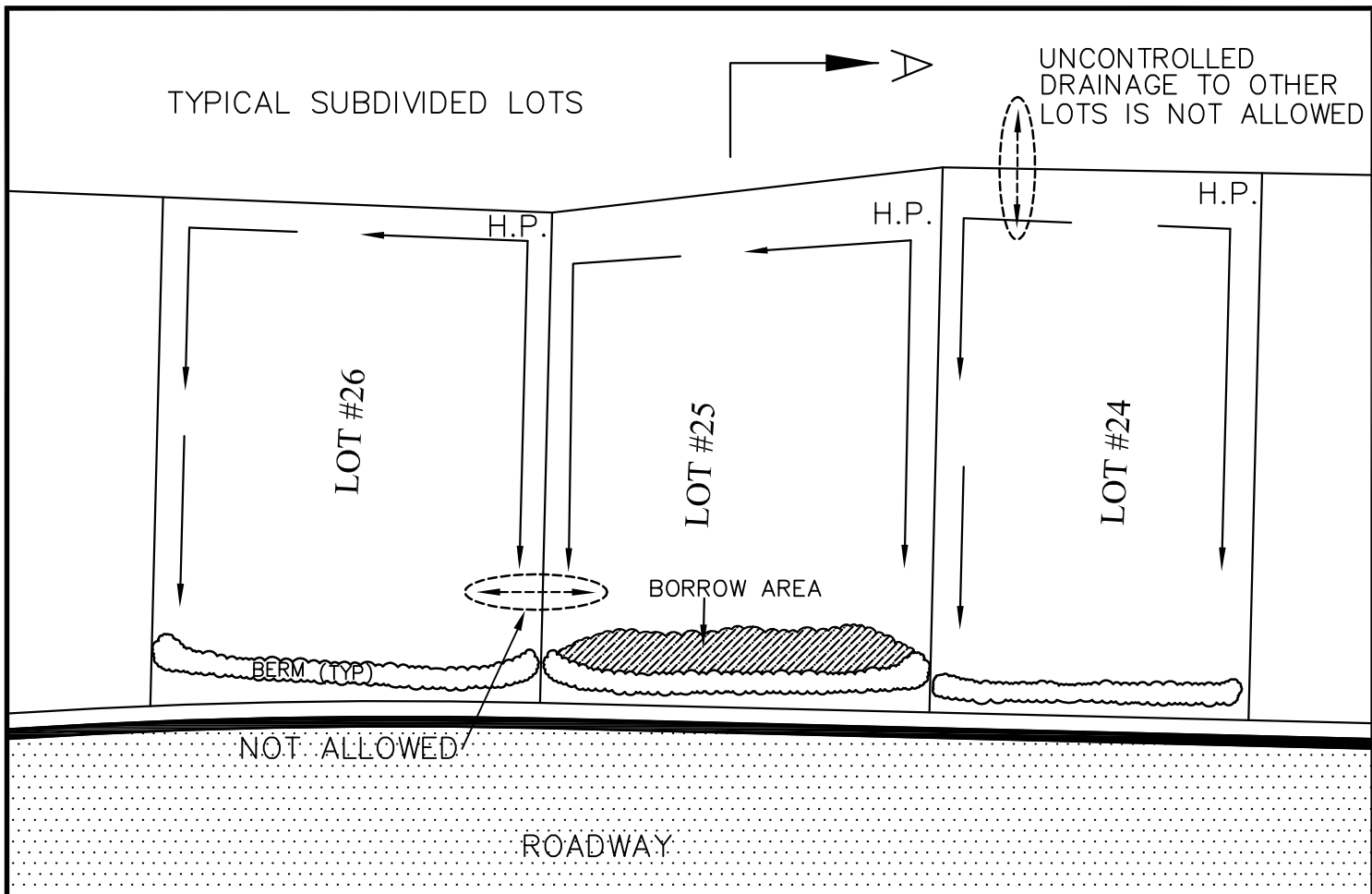
3 1/2"

Technical drawing showing the dimensions and components of a grate and frame assembly. The drawing includes the following dimensions and labels:

- Dimensions:  $4\frac{1}{2}"$ ,  $3\frac{3}{4}"$ ,  $1'6"$ ,  $4\frac{1}{2}"$ ,  $6"$ ,  $3\frac{1}{2}"$ , and  $6"$ .
- Labels:
  - PROTECTION BAR LOCATION
  - ASPHALT PAVEMENT TO EDGE OF GRATE
  - LONGITUDINAL FRAME
  - BAR ANCHOR  $\frac{3}{8}" \varnothing$

1. FRAME SHALL BE PAINTED WITH ONE COAT PRIMER AND ONE COAT LIGHT GREY FINISH.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT			STANDARD DWG. NO.	
CURB INLET SINGLE CATCH BASIN FRAME			206B	
			2 OF 2	
			APPROVED:	
			DATE: MAY 2009 BY: TE	
REVISIONS				
DATE	DESCRIPTION	BY		



NOTES:

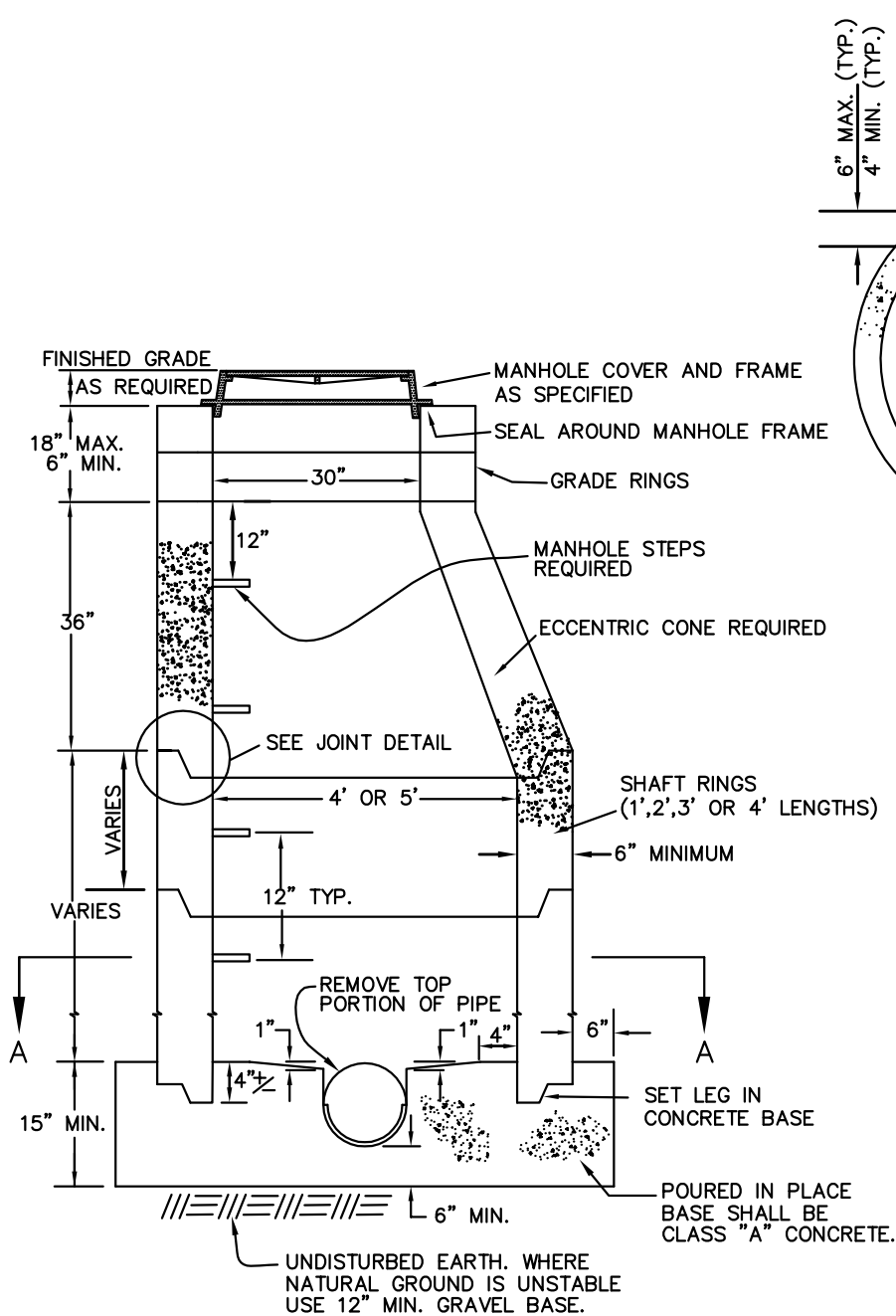
1. BERM SHALL INCLUDE 2" DIA. DRAIN PIPE. PIPE MUST EXTEND BEYOND THE OUTER FACE OF THE BERM.
2. EACH LOT MUST CONTAIN IT'S OWN STORM WATER.
3. CROSS LOT DRAINAGE SHALL NOT BE ALLOWED.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TEMPORARY ON-SITE DRAINAGE RETENTION BERM  
FOR GRADED SUBDIVISION LOTS

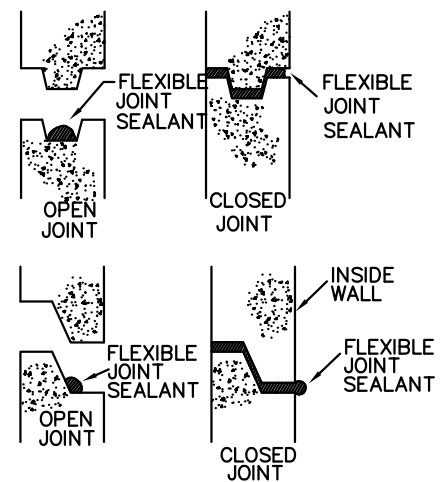
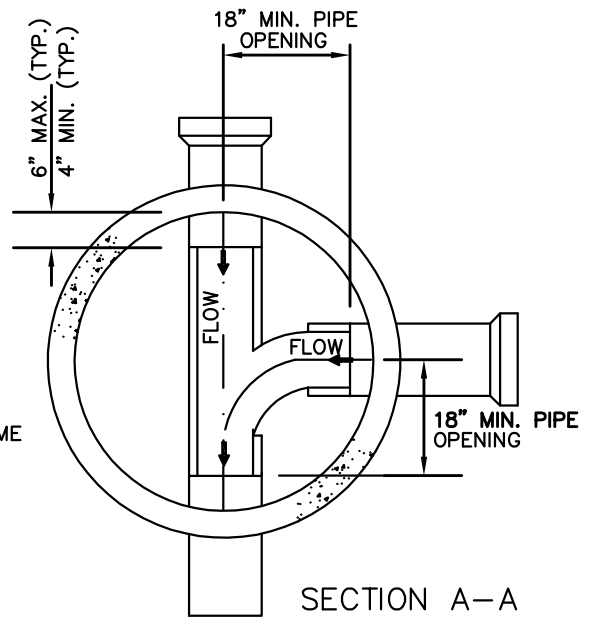
STANDARD DWG. NO.	
207	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



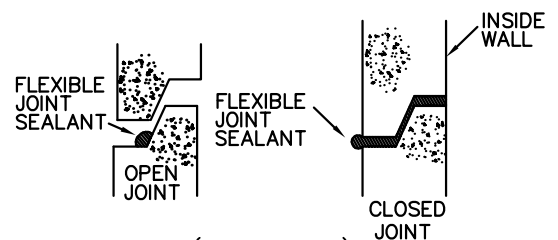
SECTION THRU CENTER

NOTES:

- 1- SEE DRAWING NO. 220 FOR JUNCTION AND DROP MANHOLE DETAILS AND MANHOLE SIZES.
- 2- PRECAST BASE MAY BE USED, FROM APPROVED SUPPLIERS.
- 3- IF OPTIONAL JOINT IS USED, ALL MANHOLE SECTIONS SHALL BE CLEARLY MARKED ON THE INSIDE AS TO THE MANUFACTURER AND TYPE OF JOINT BEING USED.



(STANDARD)



(OPTIONAL)

JOINT DETAILS

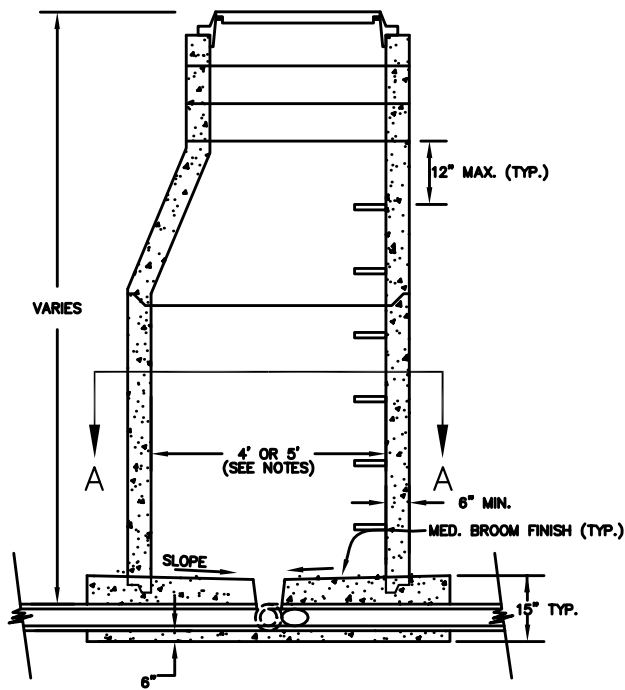
NO SCALE

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

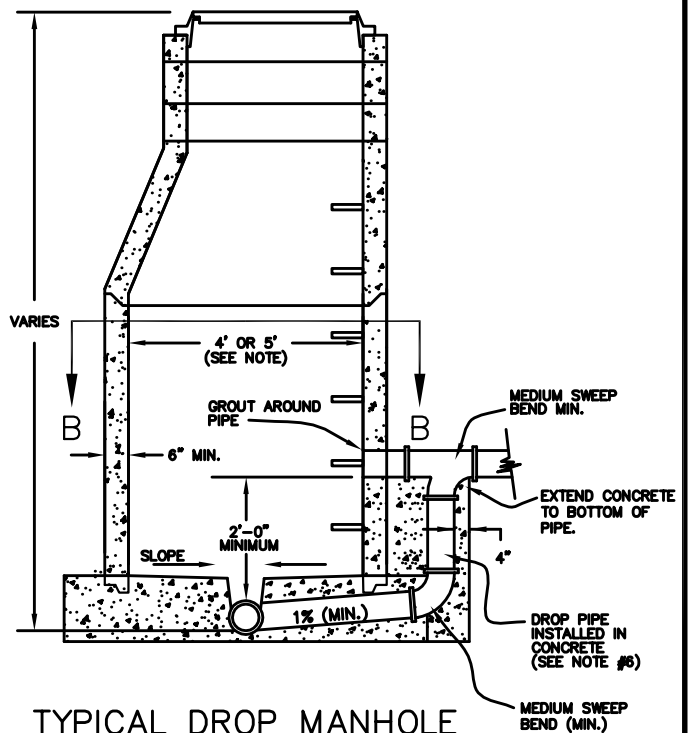
REVISIONS		
DATE	DESCRIPTION	BY

STANDARD MANHOLE  
DETAILS

STANDARD DWG. NO.	
220	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



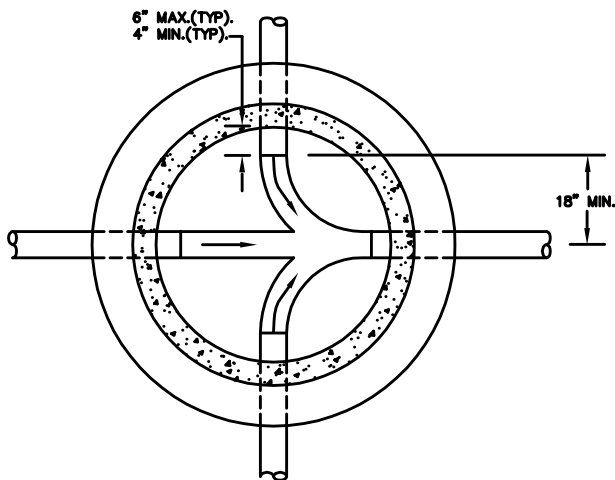
**TYPICAL JUNCTION MANHOLE**  
(SECTION THRU CENTER)



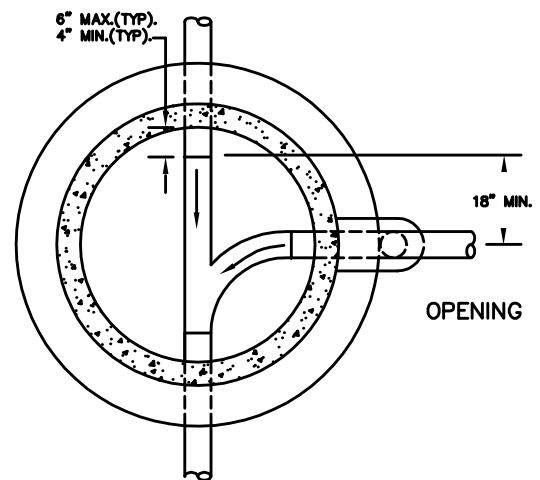
**TYPICAL DROP MANHOLE**  
(SECTION THRU CENTER)

**NOTES:**

- 1- FOR SEWER PIPES LESS THAN 12-INCH DIAMETER USE 4-FOOT DIAMETER MANHOLE.
- 2- FOR SEWER PIPES WITH 12-INCH OR GREATER DIAMETER USE 5-FOOT DIAMETER MANHOLE.
- 3- WHEN THE SUM OF ALL PIPE SIZES CONNECTED TO THE MANHOLE TOTALS 24 INCHES OR GREATER USE A 5-FOOT DIAMETER MANHOLE.
- 4- WHEN SEWER DEPTH IS 12 FEET OR GREATER USE A 5-FOOT DIAMETER MANHOLE.
- 5- SEE DRAWING NO. 220 FOR ADDITIONAL DETAILS.
- 6- VERTICAL DROP PIPE AND FITTINGS SHALL BE THE SAME SIZE AS THE INCOMING SEWER PIPE.



**SECTION A-A**



**SECTION B-B**

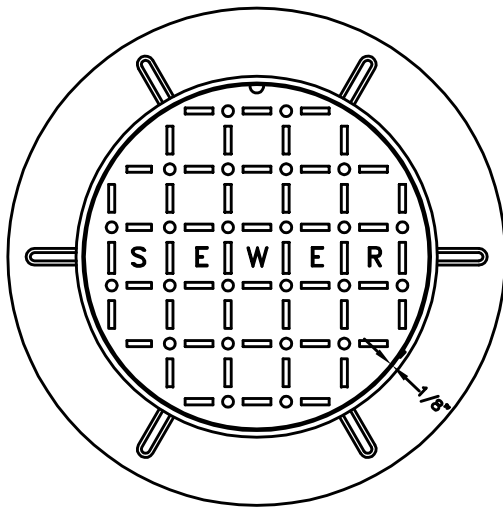
NO SCALE

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

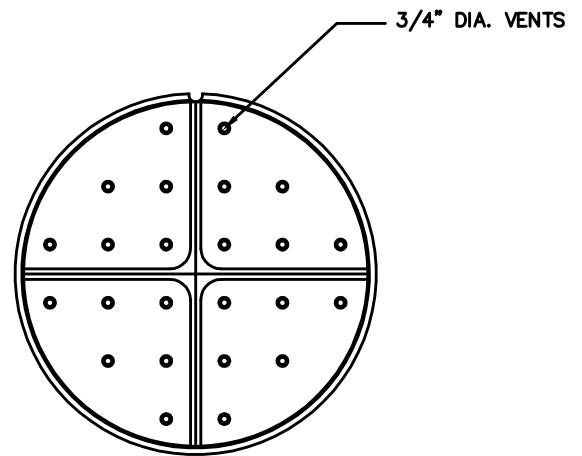
REVISIONS		
DATE	DESCRIPTION	BY

JUNCTION & DROP MANHOLE  
DETAILS

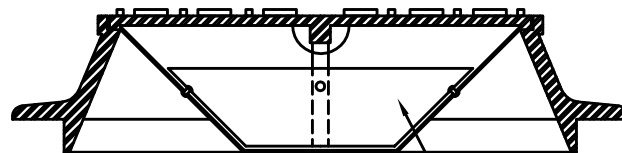
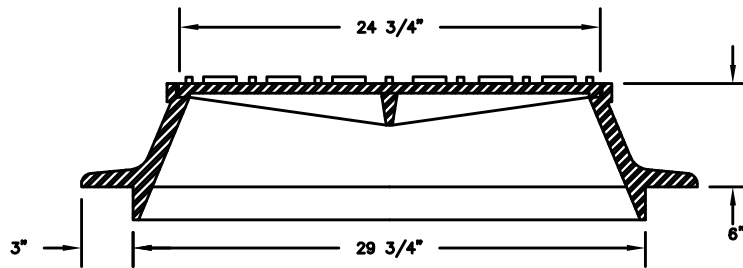
STANDARD DWG. NO.	
221	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



PLAN OF COVER & RING



BOTTOM VIEW OF COVER



SECTIONS

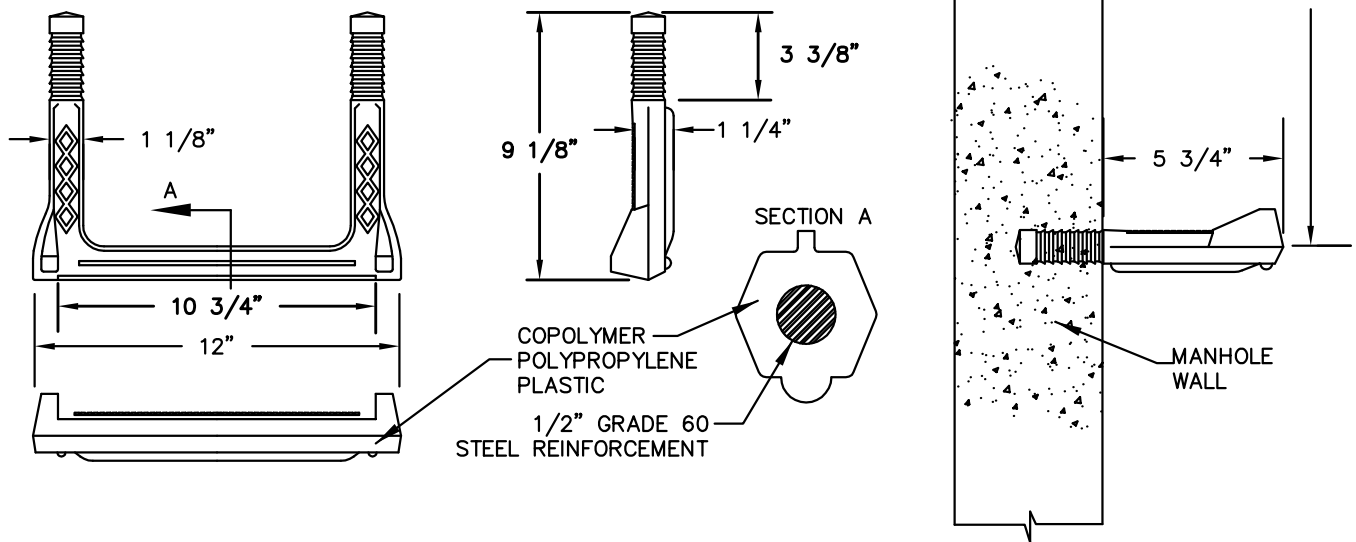
DUST PAN  
ALUMINUM OR GALVANIZED  
(REQUIRED IN UNPAVED AREAS)

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

MANHOLE FRAME & COVER  
DETAILS

STANDARD DWG. NO.	
222	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



## MANHOLE STEPS

### NOTES:

- 1- INSTALL STEPS PER MANUFACTURERS RECOMMENDATIONS.
- 2- STEPS SHALL BE ALIGNED VERTICALLY.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

MANHOLE STEP  
DETAILS

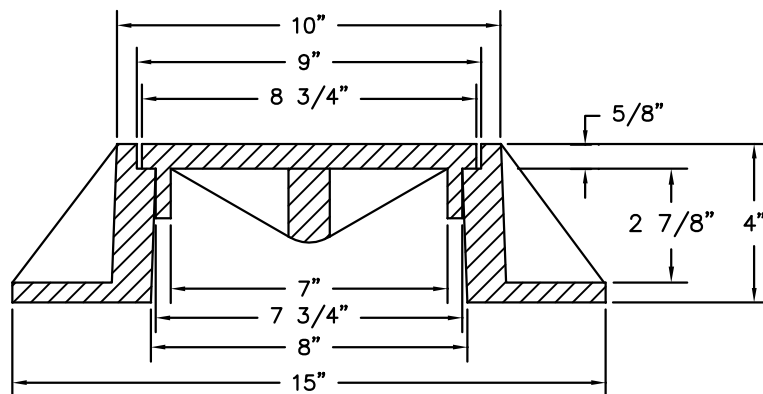
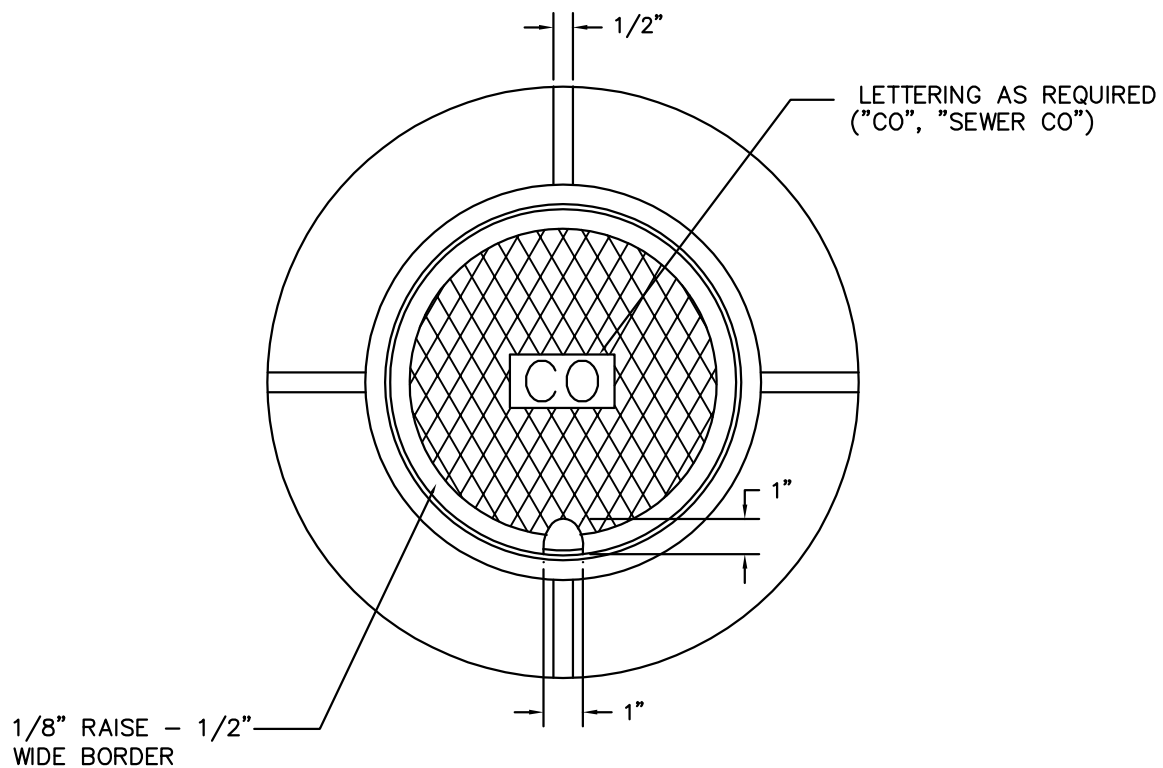
STANDARD DWG. NO.

223 1 OF 1

APPROVED:

DATE: MAY 2009 BY:

REVISIONS		
DATE	DESCRIPTION	BY



NOTES:

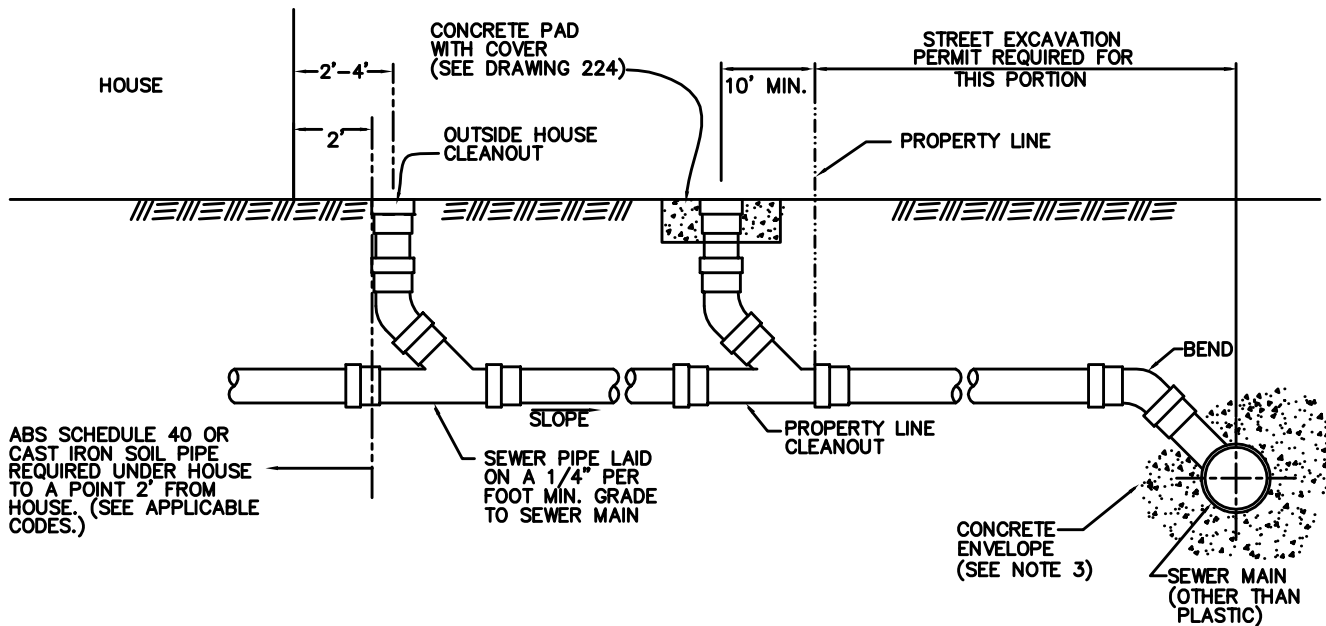
1- MATERIAL SHALL BE CAST IRON ASTM A48, CL30

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

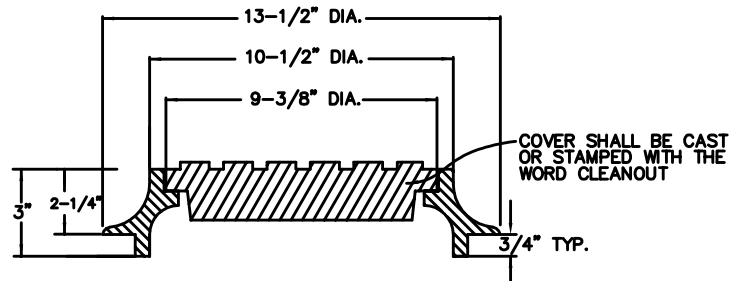
REVISIONS		
DATE	DESCRIPTION	BY

SEWER CLEANOUT COVER DETAIL

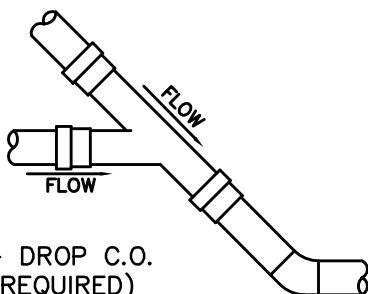
STANDARD DWG. NO.	
224	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



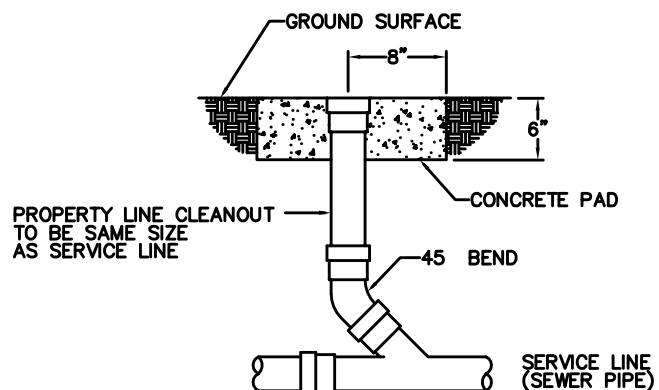
- NOTES:
- 1- PROPERTY LINE AND OUTSIDE HOUSE CLEANOUTS ARE REQUIRED AS SHOWN.
  - 2- CLEANOUT REQUIRED AT 100' MAX. SPACING (STRAIGHT RUNS) AND FOR EACH AGGREGATE CHANGE IN DIRECTION, WHERE TOTAL AGGREGATE CHANGE EXCEEDS 135 DEGREES.
  - 3- ALL LATERALS CUT INTO EXISTING MAINS SHALL BE ADAPTED WITH SADDLES. WHERE SADDLES ARE NOT WATER TIGHT, A CONCRETE ENVELOPE SHALL BE REQUIRED. LATERALS SHALL NOT PROTRUDE INTO SEWER MAINS.
  - 4- ALL CLEANOUTS SHALL HAVE A CAST IRON RING AND COVER WITH H-20 RATING OR OTHER APPROVED PROTECTIVE DEVICE.
  - 5- FOR COMMERCIAL APPLICATION CONTACT WASTE WATER DEPARTMENT.



STANDARD CLEANOUT  
RING & LID - FOR DRIVEWAYS  
(H-20 RATING)



DETAIL - DROP C.O.  
(WHERE REQUIRED)



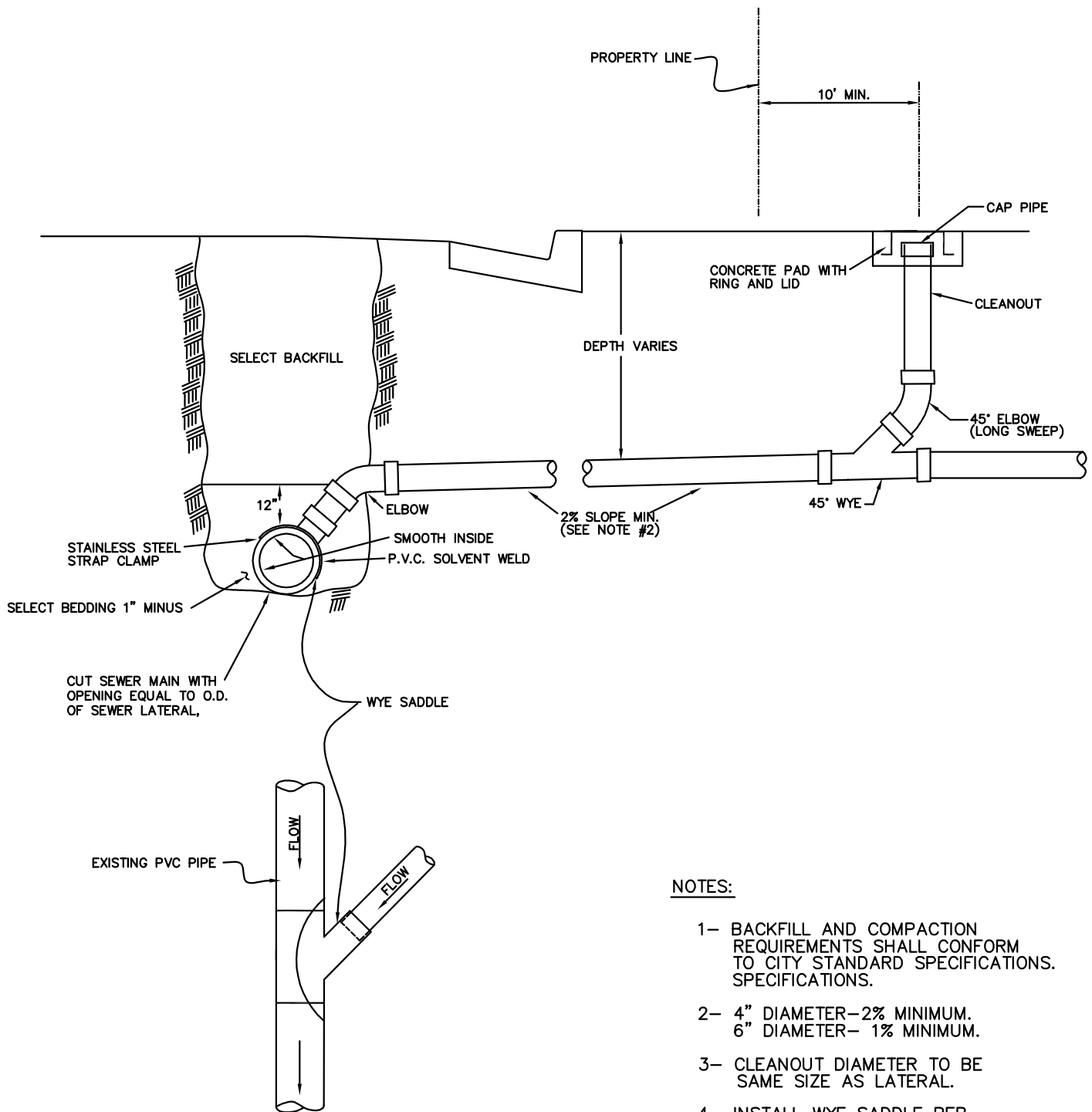
CLEANOUT DETAIL B

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TYPICAL RESIDENTIAL SEWER CONNECTION  
DETAILS

STANDARD DWG. NO.	
230	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



**NOTES:**

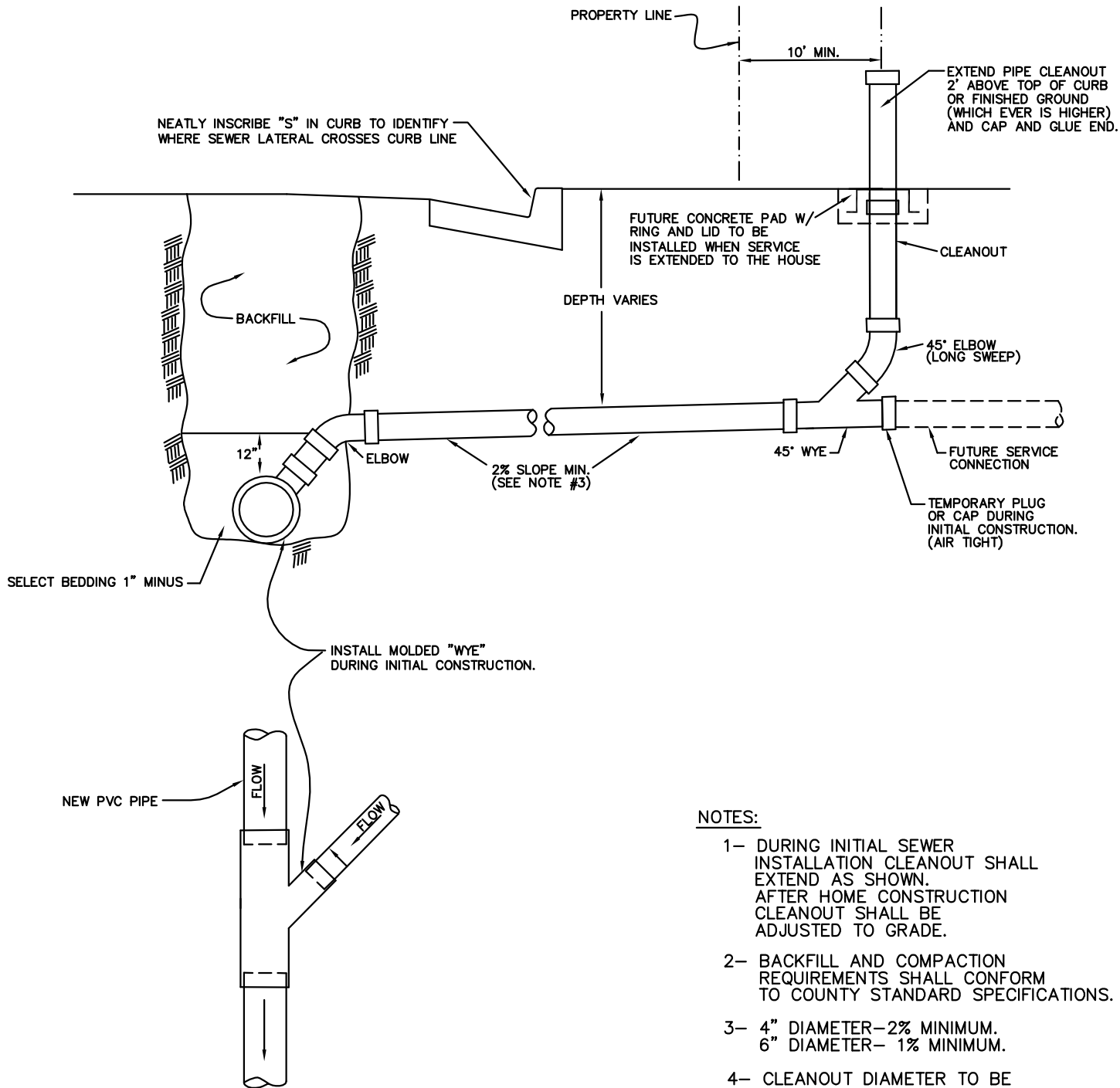
- 1- BACKFILL AND COMPACTION REQUIREMENTS SHALL CONFORM TO CITY STANDARD SPECIFICATIONS.
- 2- 4" DIAMETER- 2% MINIMUM.  
6" DIAMETER- 1% MINIMUM.
- 3- CLEANOUT DIAMETER TO BE SAME SIZE AS LATERAL.
- 4- INSTALL WYE SADDLE PER MANUFACTURER'S RECOMMENDATIONS.

**WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT**

REVISIONS		
DATE	DESCRIPTION	BY

P.V.C. SERVICE CONNECTION  
EXISTING P.V.C. SEWER MAINS

STANDARD DWG. NO.	
231	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



#### NOTES:

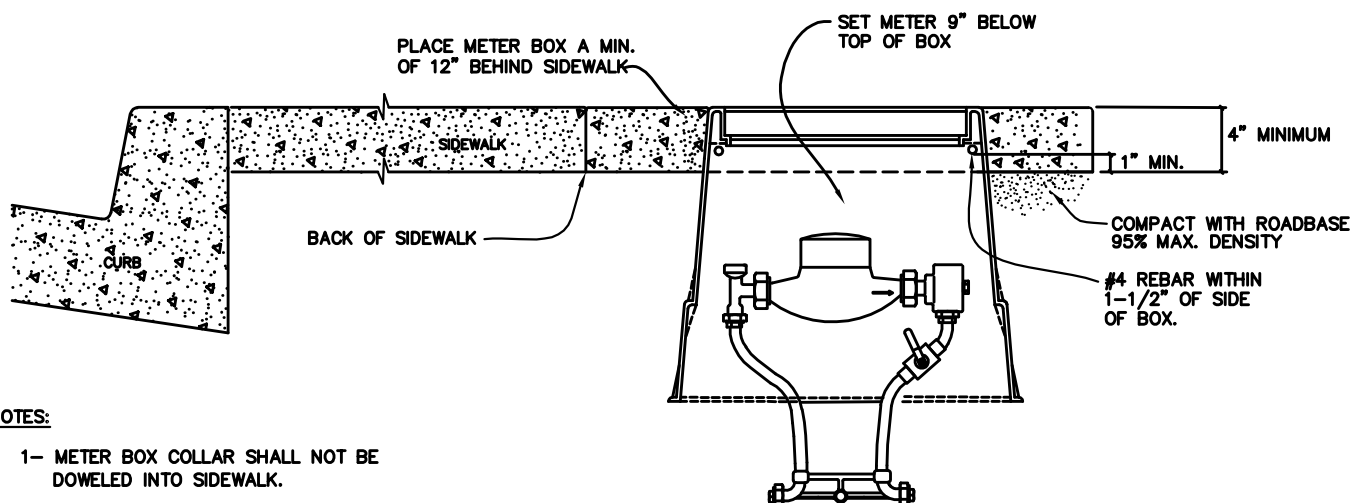
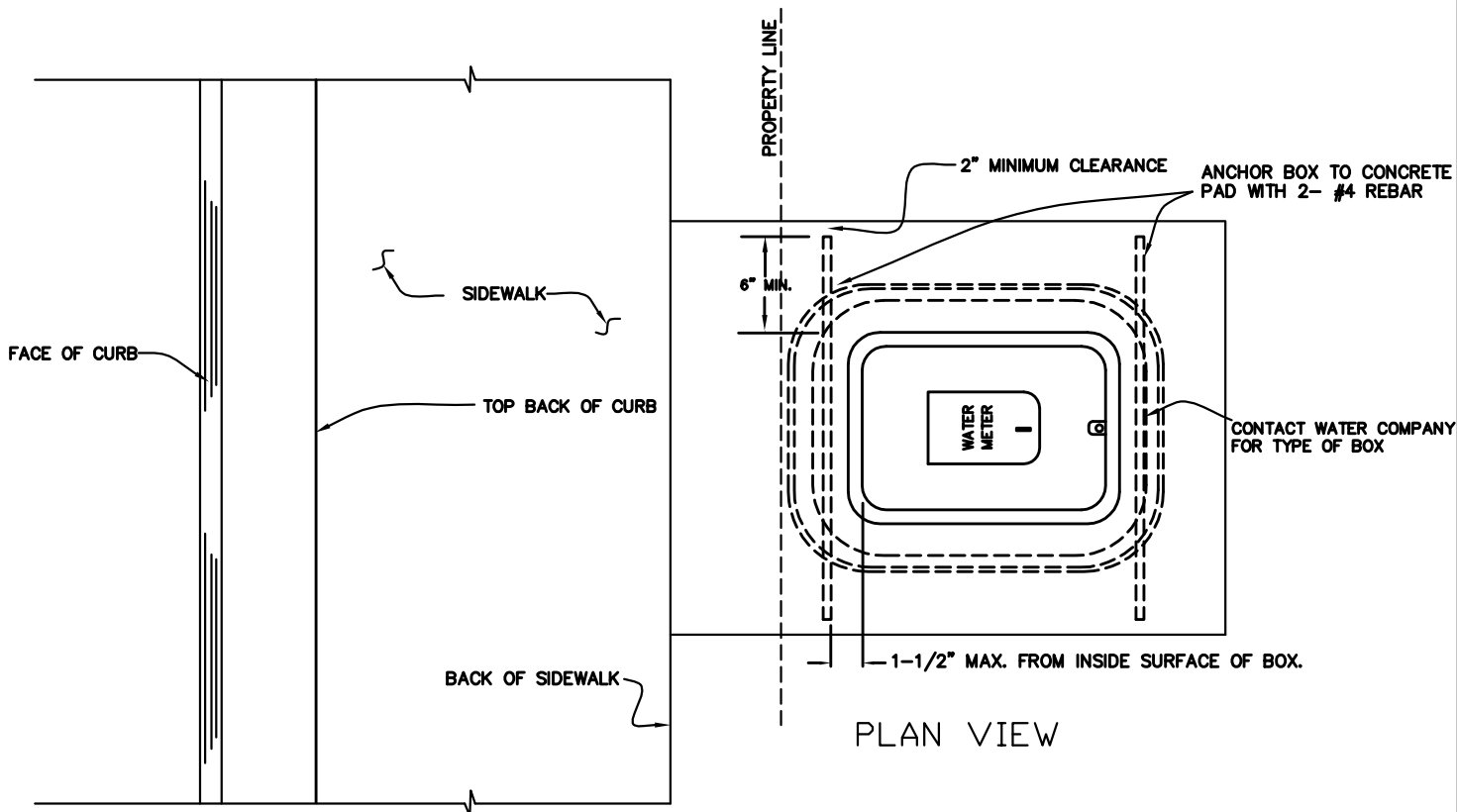
- 1- DURING INITIAL SEWER INSTALLATION CLEANOUT SHALL EXTEND AS SHOWN. AFTER HOME CONSTRUCTION CLEANOUT SHALL BE ADJUSTED TO GRADE.
- 2- BACKFILL AND COMPACTION REQUIREMENTS SHALL CONFORM TO COUNTY STANDARD SPECIFICATIONS.
- 3- 4" DIAMETER-2% MINIMUM.  
6" DIAMETER- 1% MINIMUM.
- 4- CLEANOUT DIAMETER TO BE SAME SIZE AS LATERAL.
- 5- BRASS PLUG MARKED WITH "S" PLACED IN TOP OF CURB MAY BE USED IN LIEU OF INSCRIBED "S" IN FACE.

#### WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

P.V.C. SERVICE CONNECTION  
NEW P.V.C. SEWER MAINS

STANDARD DWG. NO.	
232	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



**NOTES:**

- 1- METER BOX COLLAR SHALL NOT BE DOWELED INTO SIDEWALK.
- 2- IN DRIVEWAYS, USE CONCRETE BOX WITH CAST IRON LID.

SECTION

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

WATER METER BOX  
DETAILS

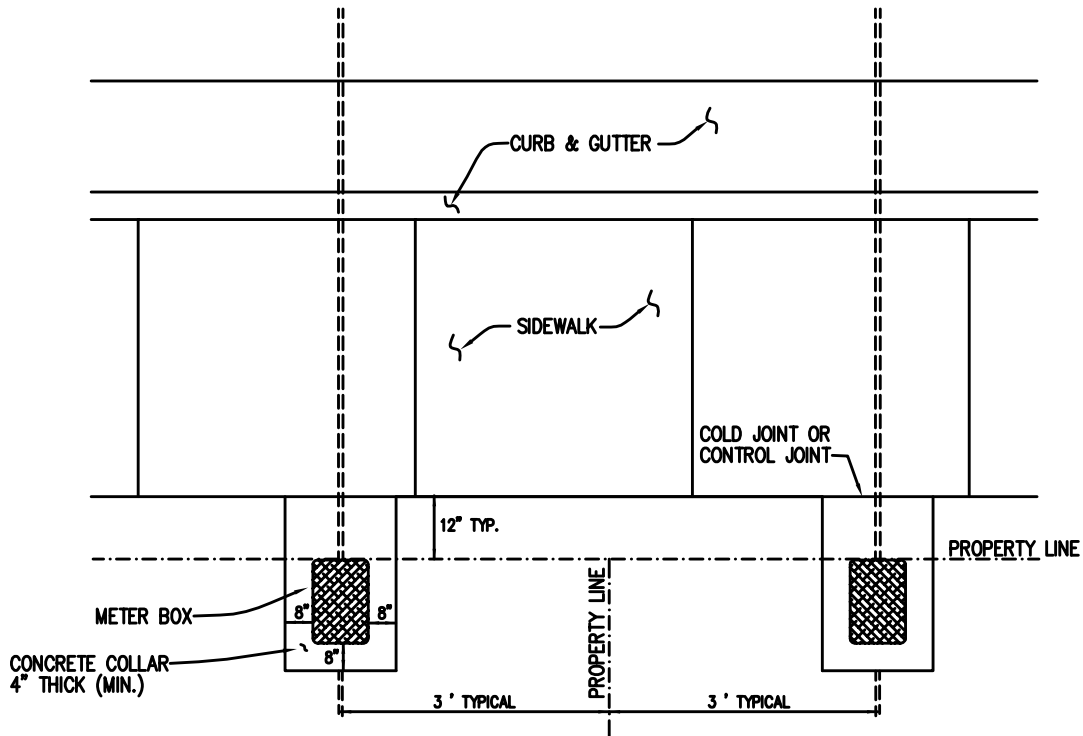
STANDARD DWG. NO.

300 1 OF 1

APPROVED:

DATE: MAY 2009 BY:

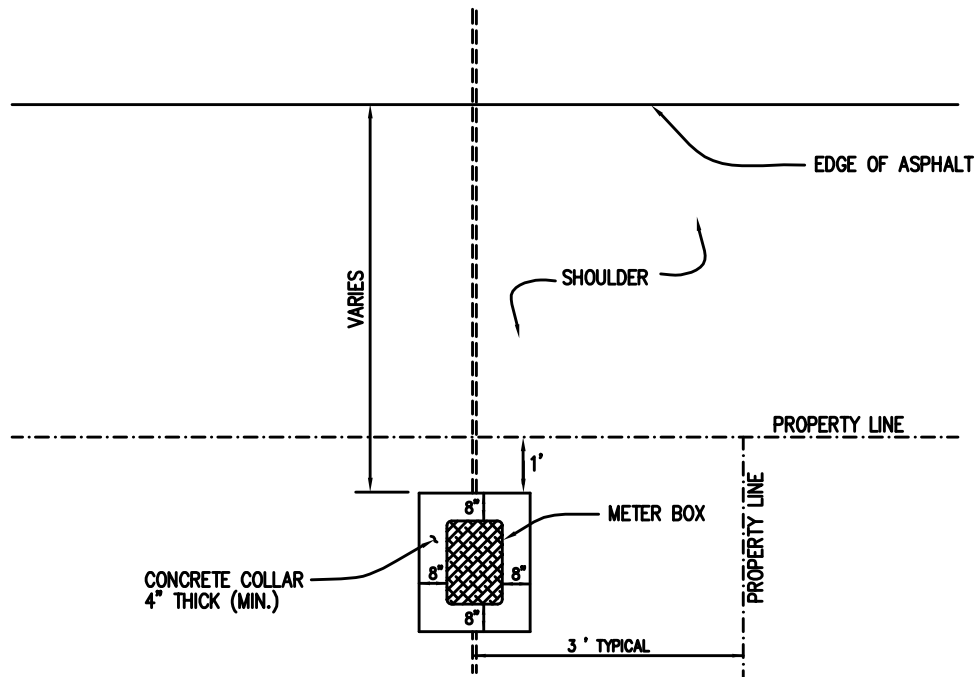
REVISIONS		
DATE	DESCRIPTION	BY



PLAN VIEW W/ SIDEWALKS  
TYPICAL DUAL METER SERVICES

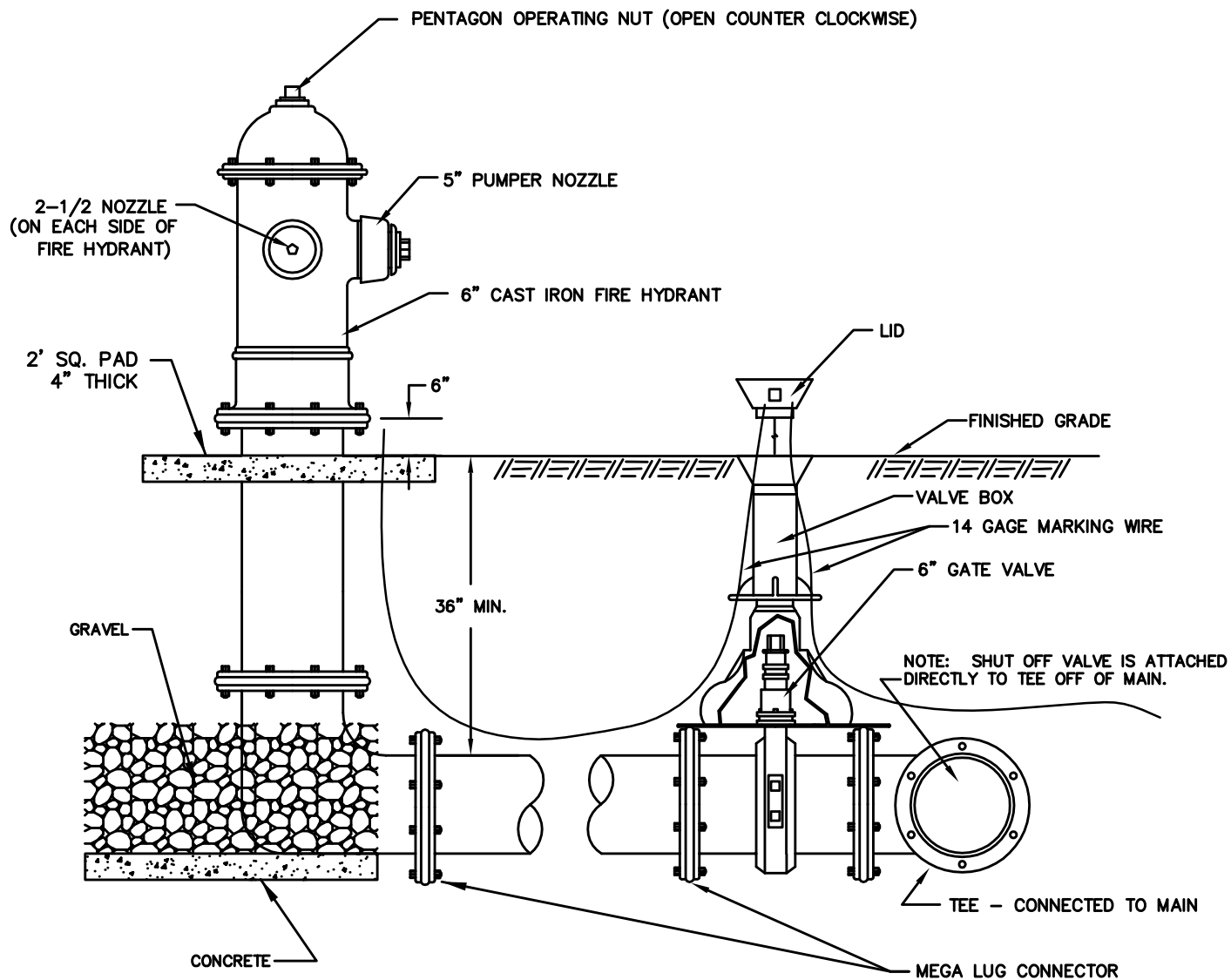
**NOTES:**

1- DO NOT DOWEL METER BOX  
COLLAR INTO SIDEWALK.



PLAN VIEW WITHOUT SIDEWALKS  
TYPICAL SINGLE SERVICE

REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	WATER METER BOX LOCATION DETAILS		301	1 OF 1
					APPROVED:	
					DATE: MAY 2009	BY:



NOTES:

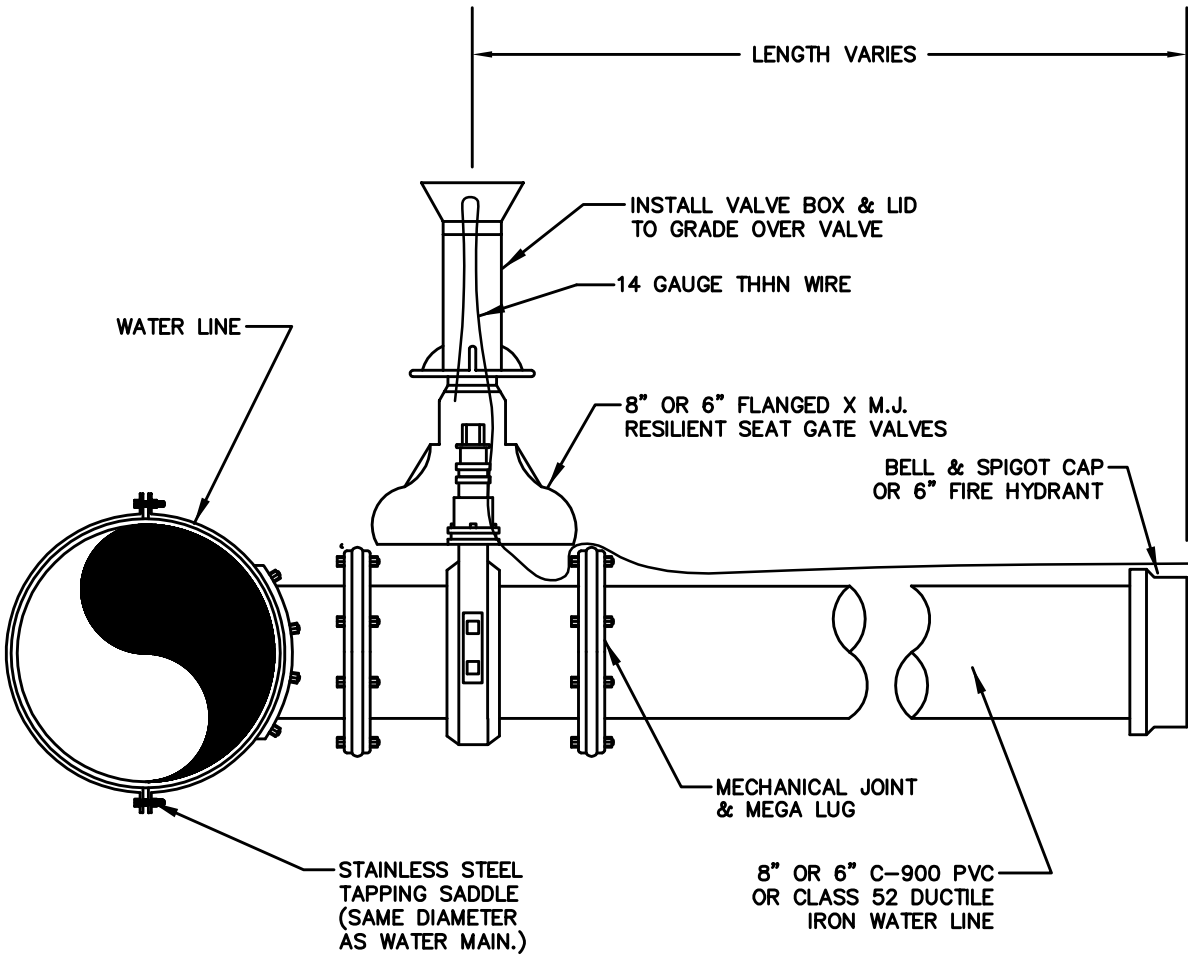
- 1- IN GENERAL, NO PART OF THE FIRE HYDRANT SHALL BE PLACED WITHIN 12" OF THE BACK OF THE SIDEWALK.
- 2- INSTALL TRACER WIRE FROM SHUT-OFF VALVE TO HYDRANT

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD FIRE HYDRANT  
DETAILS

STANDARD DWG. NO.	
302	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

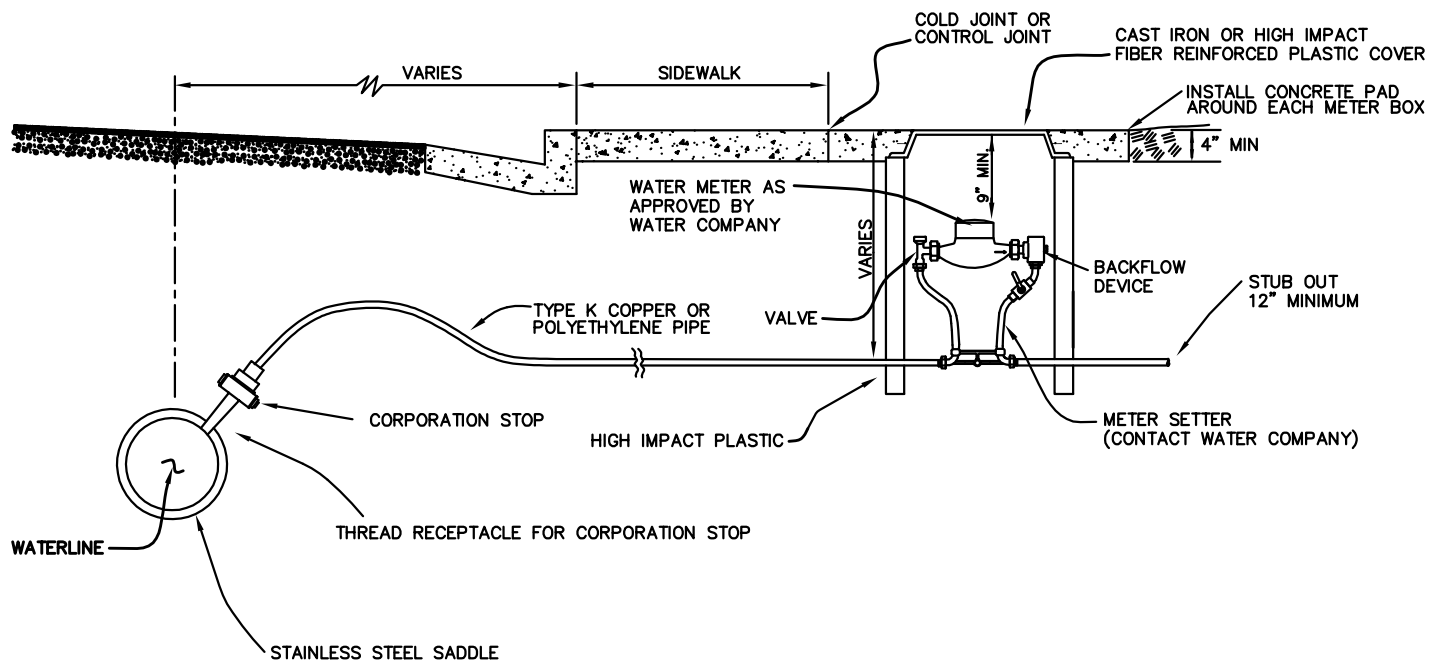


WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

8" OR 6" WATER LATERAL  
(CONNECTION TO EXISTING LINE)

STANDARD DWG. NO.	
304	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



NOTES:  
 1- ALL TRENCH EXCAVATION AND COMPACTION  
 SHALL BE IN ACCORDANCE WITH STANDARD  
 SPECIFICATIONS.

# WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

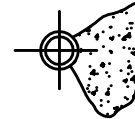
REVISIONS		
DATE	DESCRIPTION	BY

## TYPICAL WATER SERVICE CONNECTION & METER

STANDARD DWG. NO.	
305	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

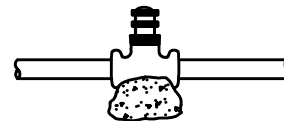
THRUST BLOCK BEARING AREA IN SQUARE FEET								
PIPE SIZE	CONDITION							
	I	II	III	IV	V	VI	VII	VII
4"	2.6	3.3	2.6	1.3	1.3	2.0	3.3	2.6
6"	4.6	6.5	3.9	2.0	2.6	3.3	6.5	4.6
8"	7.8	11.0	5.9	3.3	3.9	5.9	11.0	7.8
10"	12.4	17.5	9.8	5.2	6.5	9.1	17.5	12.4
12"	17.5	24.8	13.6	7.8	9.1	12.3	24.8	17.5
14"	24.0	33.8	18.2	9.7	12.3	16.9	33.8	24.0
16"	31.1	44.0	23.8	12.7	15.5	23.2	44.0	31.1

1. CALCULATED ON 225 LB. TEST PRESSURE & ALLOWABLE BEARING PRESSURE OF 2000 LBS. PER SQUARE FOOT.
2. IN POOR SOILS SPECIAL DESIGN IS REQUIRED.
3. CONCRETE SHALL BE CLASS "C" OR BETTER.
4. ALL THRUST BLOCK BEARING FACES SHALL BE POURED AGAINST UNDISTURBED SOIL OR APPROVED COMPACTED BACKFILL.
5. PRIOR APPROVAL FROM THE WATER COMPANY REQUIRED FOR USE OF CONCRETE THRUST BLOCKS.

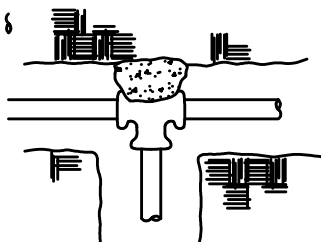


12"  
MIN.  
TYPICAL SECTION THRU  
THRUST BLOCKS

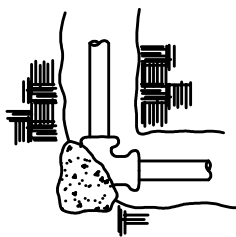
VALVE ANCHOR REQUIRED  
FOR VALVES 12" OR LARGER



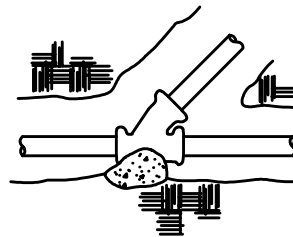
### THRUST BLOCKING



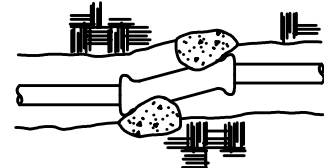
CONDITION I



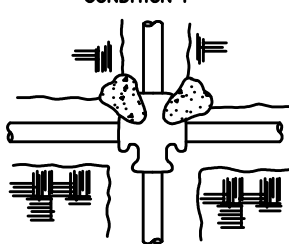
CONDITION II



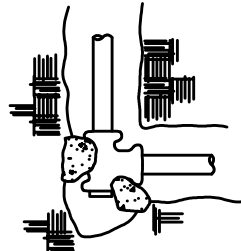
CONDITION III



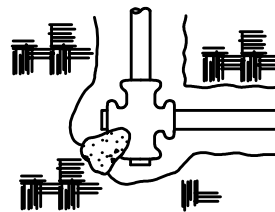
CONDITION IV



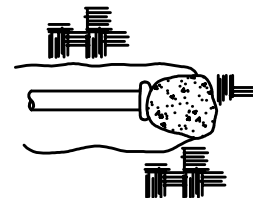
CONDITION V



CONDITION VI



CONDITION VII



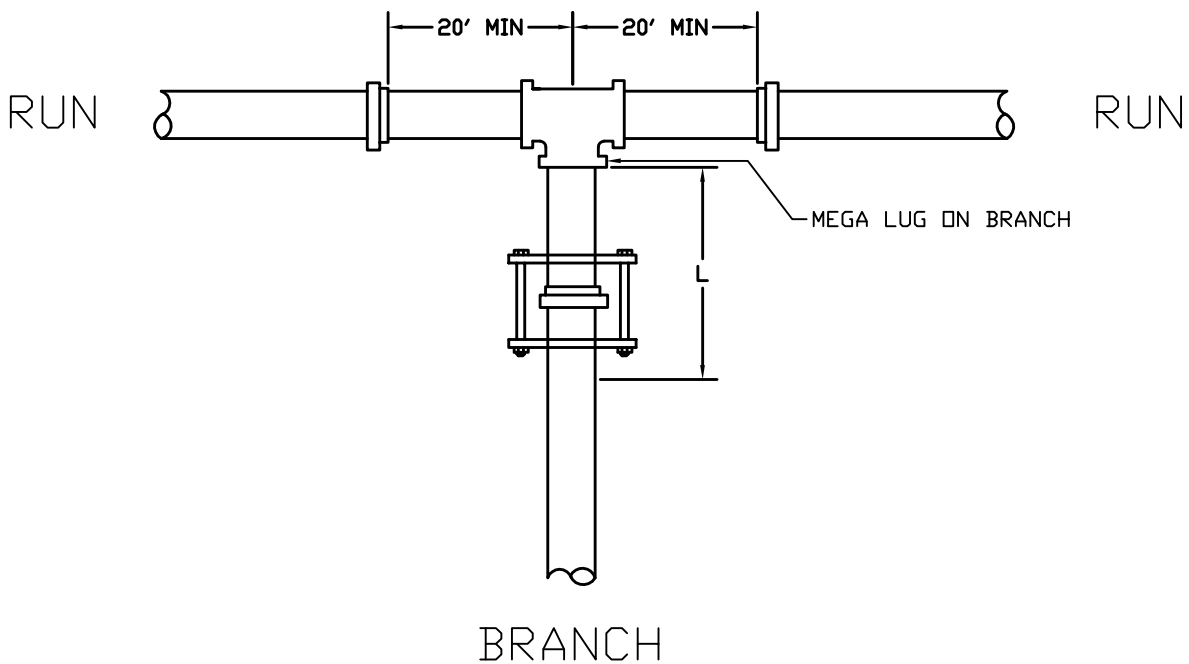
CONDITION VIII

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

WATER LINE THRUST BLOCK  
DETAILS

STANDARD DWG. NO.	
306	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



RUN SIZE DIAMETER		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE DIAMETER	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				10	*	*	*	*	*	*
	12					28	12	4	*	*	*
	14						45	31	17	3	*
	16							62	49	37	11
	18								78	67	44
	20									95	74
	24										127

\* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER COUNTY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

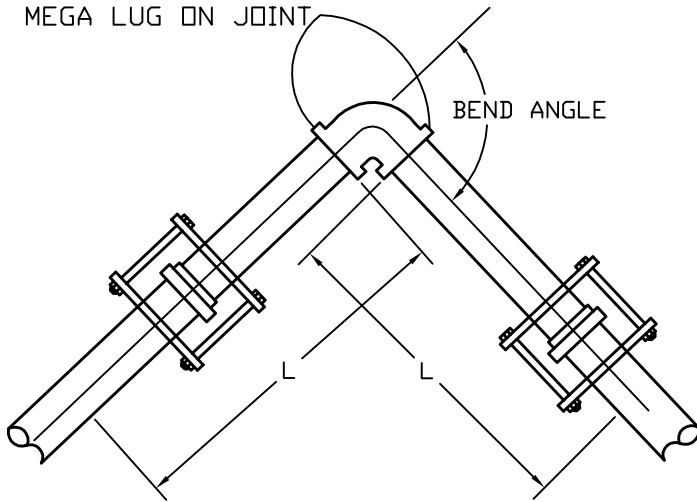
WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD TEE PVC  
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
307	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

MEGA LUG ON JOINT



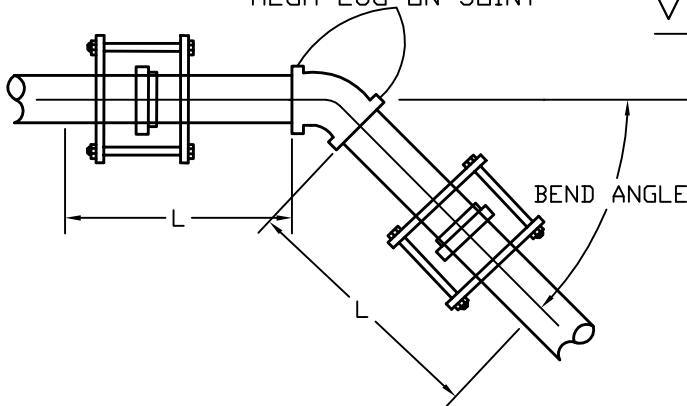
## HORIZONTAL BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER								
BEND ANGLE		4	6	8	10	12	14	16	18	20
	11.25	2	3	4	4	5	6	7	7	8
	22.5	4	6	7	9	10	12	13	15	16
	45	8	12	15	18	21	24	28	30	33
	90	20	28	37	44	52	59	67	73	81

RESTRAINED LENGTHS, "L" (IN FEET)

MEGA LUG ON JOINT



## VERTICAL DOWN BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER								
BEND ANGLE		4	6	8	10	12	14	16	18	20
	11.25	6	8	10	12	14	15	17	20	20
	22.5	11	15	19	23	27	31	35	40	40
	45	23	31	40	48	56	64	72	80	80

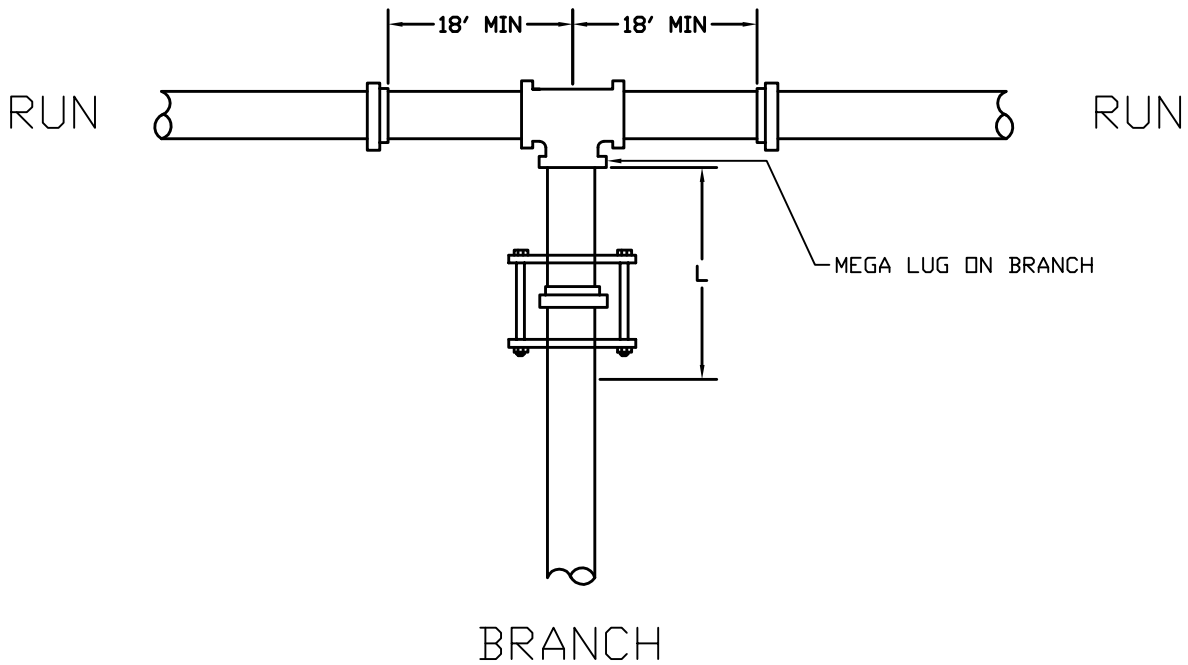
RESTRAINED LENGTHS, "L" (IN FEET)

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD BENDS FOR PVC  
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
308	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



RUN SIZE DIAMETER		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE DIAMETER	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				10	2	*	*	*	*	*
	12					19	12	4	*	*	*
	14						28	22	15	8	*
	16							37	31	26	13
	18								46	41	30
	20									55	45
	24										72

\* - FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 18' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER COUNTY SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

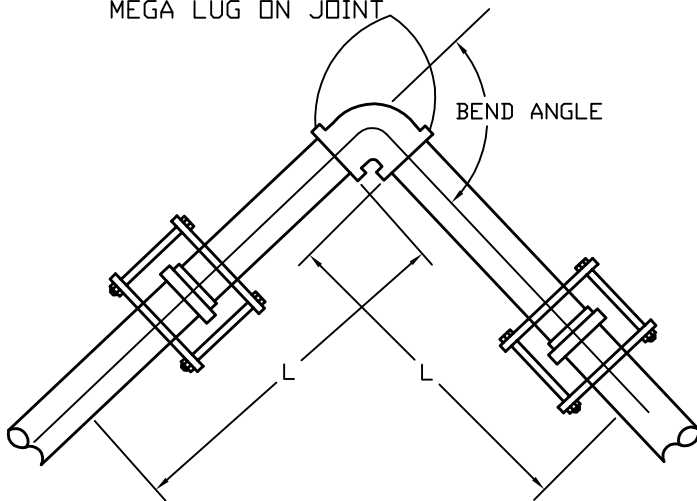
WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD TEE DUCTILE IRON  
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
309	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

MEGA LUG ON JOINT



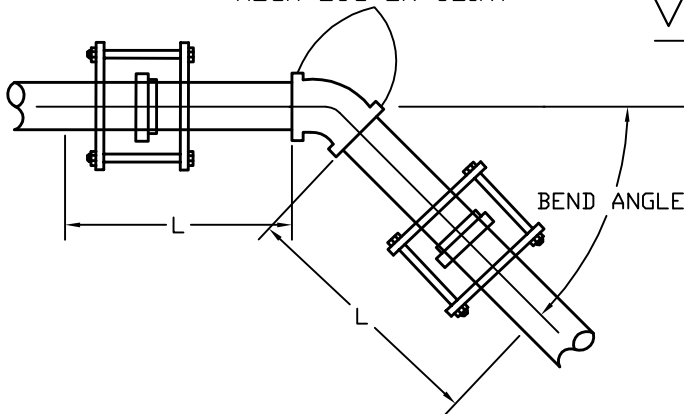
## HORIZONTAL BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER							
BEND ANGLE		4	6	8	10	12	14	16	20
	11.25	3	2	3	3	4	4	5	6
	22.5	3	4	7	7	8	9	10	12
	45	6	9	12	14	16	19	21	26
	90	15	21	28	34	40	45	51	62

RESTRAINED LENGTHS, "L" (IN FEET)

MEGA LUG ON JOINT



## VERTICAL DOWN BEND

1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

		SIZE DIAMETER							
BEND ANGLE		4	6	8	10	12	14	16	20
	11.25	3	5	7	8	8	10	11	13
	22.5	6	10	11	14	16	18	22	25
	45	14	18	24	28	33	38	43	53

RESTRAINED LENGTHS, "L" (IN FEET)

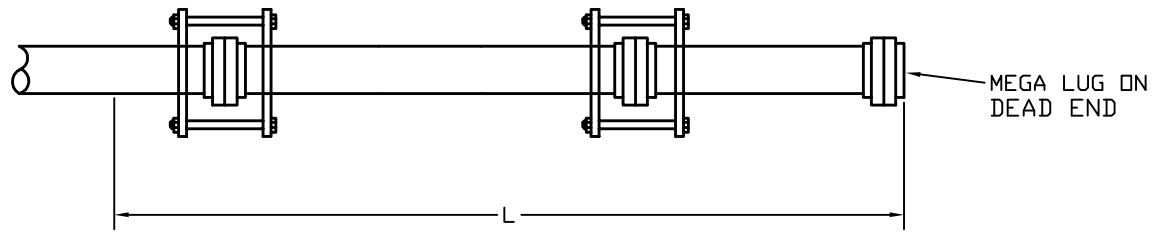
WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD BENDS FOR DUCTILE IRON  
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
310	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

# STANDARD DEAD END FOR DUCTILE IRON



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

## PIPE SIZE IN INCHES

4	6	8	10	12	14	16	18	20
23	33	45	52	62	71	80	89	98

RESTRAINED LENGTHS, "L" (IN FEET)

## RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN WASHINGTON COUNTY.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFETY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOP OF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.
6. AN INLINE VALVE IS CONSIDERED A DEAD END

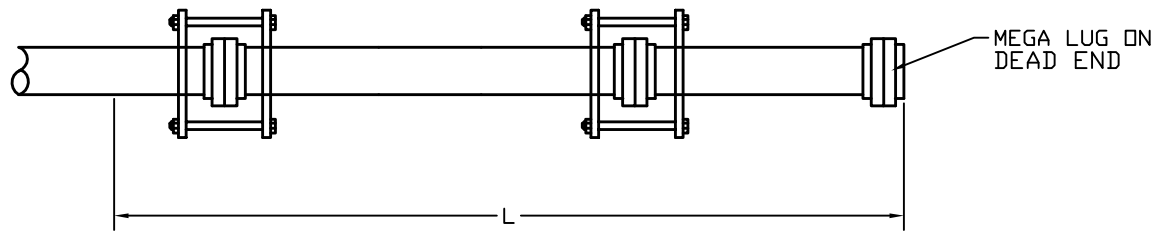
IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DESIGN ENGINEER AND APPROVED BY THE COUNTY REPRESENTATIVE.

## WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DEAD END FOR DUCTILE IRON  
RESTRAINING SYSTEM DETAIL

STANDARD DWG. NO.	
311	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER COUNTY SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION ON GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS.

PIPE SIZE IN INCHES

4	6	8	10	12	14	16	18	20
44	62	82	99	118	135	153	169	187

RESTRAINED LENGTHS, "L" (IN FEET)

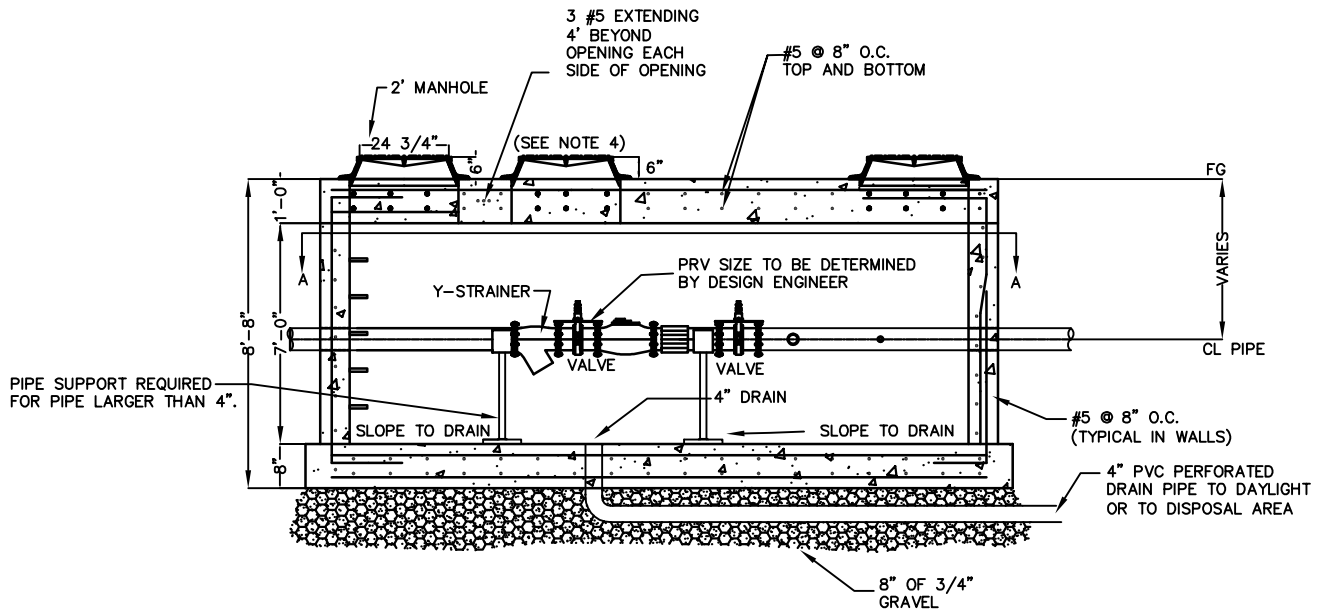
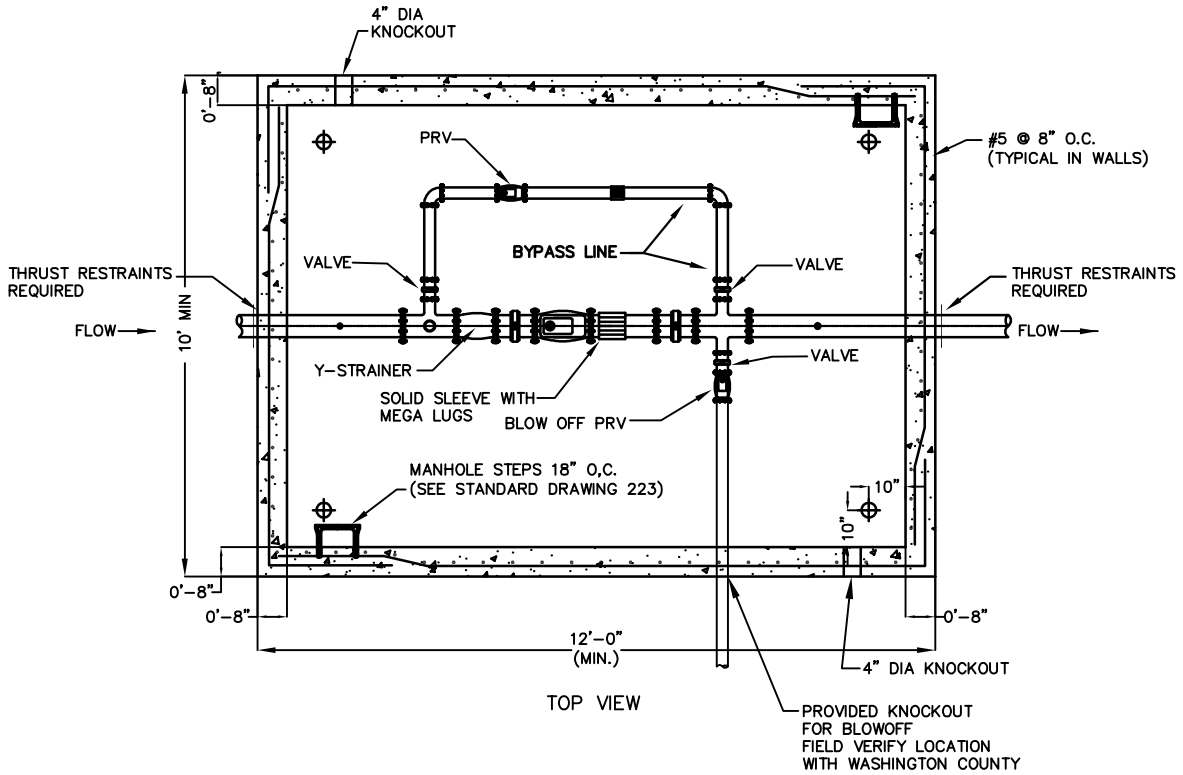
## RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN TYPICALLY USED WITH BACKFILL IN WASHINGTON COUNTY.

1. THREE (3) FEET MINIMUM DEPTH OF COVER.
2. A SAFETY FACTOR OF 1.5
3. SOIL TYPE SANDY CLAY
4. TYPE 5 TRENCH COMPACTION FROM FOUR (4) INCHES MINIMUM UNDER THE PIPE TO THE CENTER LINE OF THE PIPE, AND COMPACTED GRANULAR OR SELECTED MATERIAL FROM THE CENTER LINE OF THE PIPE TO THE TOP OF THE PIPE (90 PERCENT STANDARD PROCTOR DENSITY, AASHTO T-99).
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.
6. AN INLINE VALVE IS CONSIDERED A DEAD END.

IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DESIGN ENGINEER AND APPROVED BY THE COUNTY REPRESENTATIVE.

REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DWG. NO.	
DATE	DESCRIPTION	BY	IN LINE VALVE\DEAD END ON PVC PIPE DETAIL		312	1 OF 1
					APPROVED:	
					DATE: MAY 2009	BY:



NOTES:

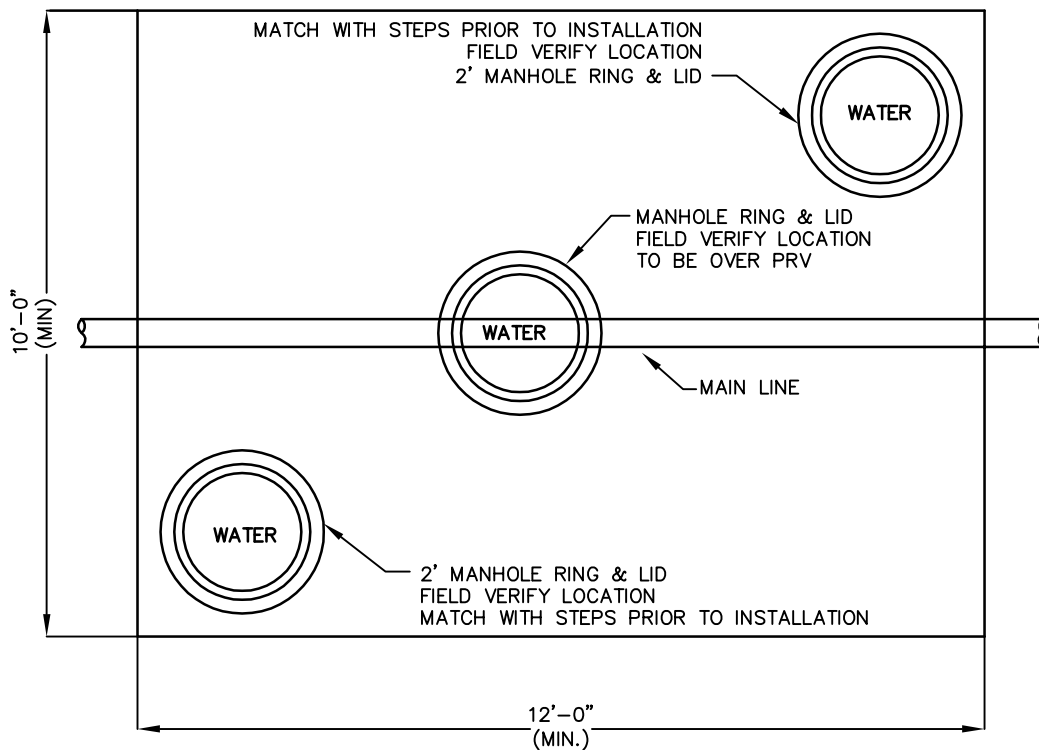
1. REFER TO CONSTRUCTION DRAWINGS FOR SITE AND DETAIL VIEWS.
2. IF VAULT IS IN SIDEWALK THE FINISH GRADE OF VAULT SHALL MATCH SLOPE OF EXISTING SIDEWALK.
3. ALL FITTINGS SHALL BE FLANGED AND MEGA LUGGED.
4. MANHOLE RING & LID WILL VARY WITH SIZE OF PRV. (24" MIN. ACCESS PORTS REQUIRED.)
5. ALL BYPASS PIPING TO BE BRASS .

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD PRESSURE REDUCING VALVE  
& VAULT FOR NEW CONSTRUCTION

STANDARD DWG. NO.	
315A	1 OF 2
APPROVED:	
DATE: MAY 2009	BY:



TOP VIEW LID

NOTES:

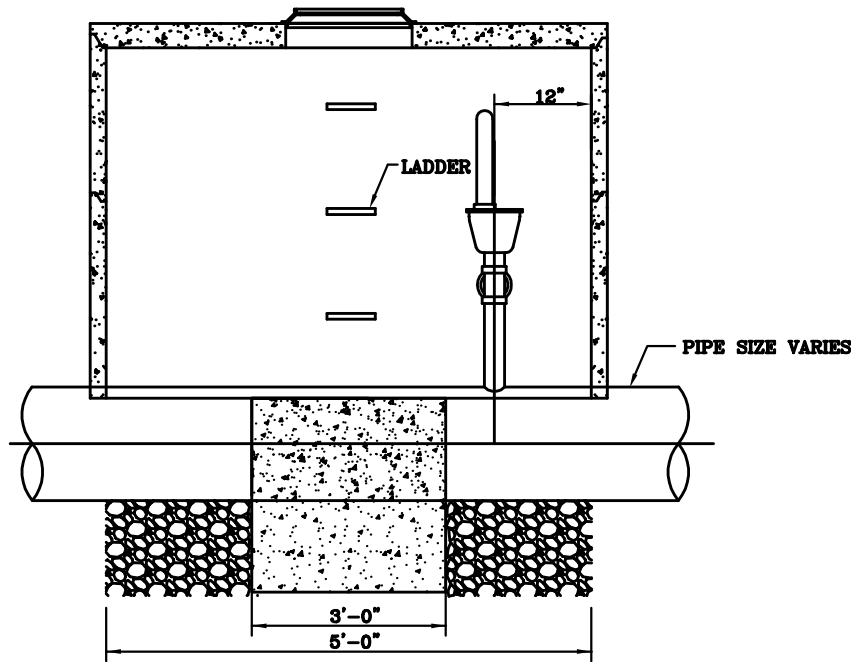
1. SIZE OF MANHOLE RING & LID WILL VARY  
WITH SIZE OF PRV.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD PRESSURE REDUCING VALVE  
VAULT LID

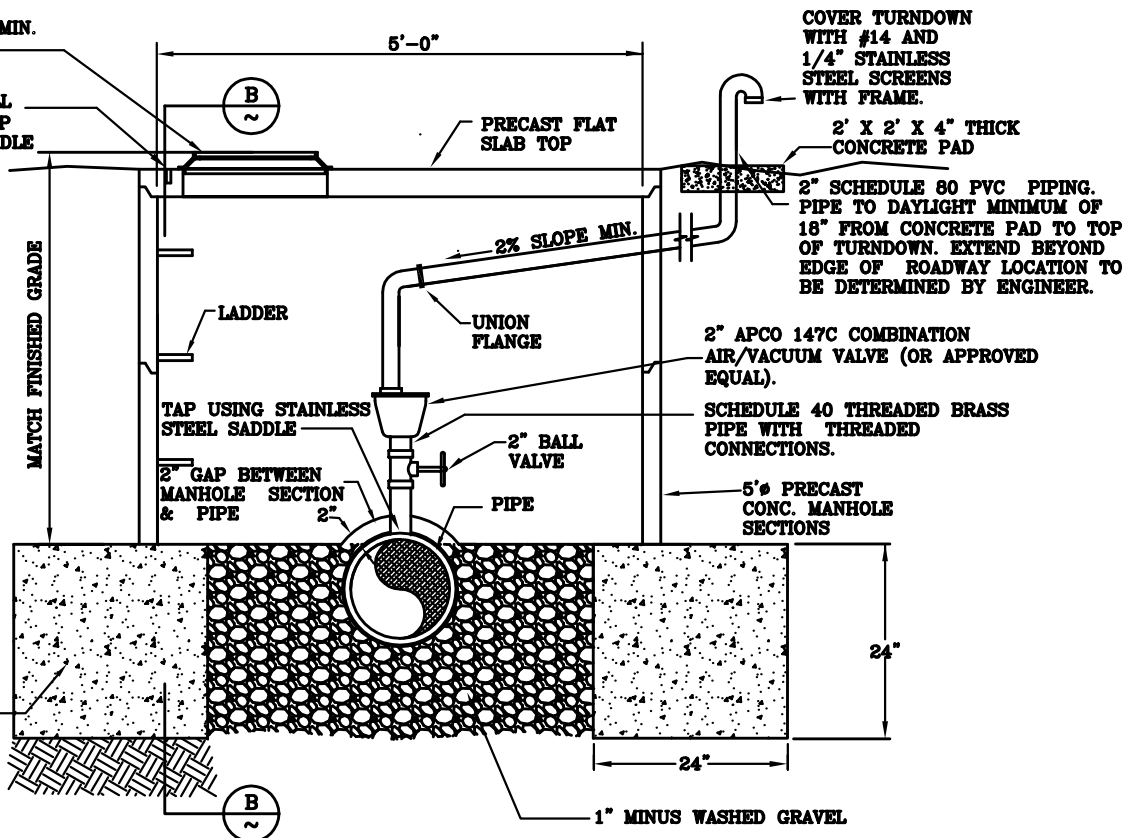
STANDARD DWG. NO.	
315B	2 OF 2
APPROVED:	
DATE: MAY 2009	BY:



VENTED MANHOLE FRAME  
& COVER W/24" LID  
COMBINED  
WEIGHT 360 LBS. MIN.  
(HS-70 RATING)

SECTION **B-B**

CONTRACTOR TO DRILL  
2-1" Ø HOLES 4" DEEP  
FOR REMOVABLE HANDLE  
TO BE USED FOR  
MANHOLE ACCESS.



COVER TURNDOWN  
WITH #14 AND  
1/4" STAINLESS  
STEEL SCREENS  
WITH FRAME.

2" X 2' X 4" THICK  
CONCRETE PAD

2" SCHEDULE 80 PVC PIPING.  
PIPE TO DAYLIGHT MINIMUM OF  
18" FROM CONCRETE PAD TO TOP  
OF TURNDOWN. EXTEND BEYOND  
EDGE OF ROADWAY LOCATION TO  
BE DETERMINED BY ENGINEER.

2" APCO 147C COMBINATION  
AIR/VACUUM VALVE (OR APPROVED  
EQUAL).

SCHEDULE 40 THREADED BRASS  
PIPE WITH THREADED  
CONNECTIONS.

5" Ø PRECAST  
CONC. MANHOLE  
SECTIONS

2" BALL  
VALVE  
PIPE

TAP USING STAINLESS  
STEEL SADDLE  
2" GAP BETWEEN  
MANHOLE SECTION  
& PIPE

LADDER

2% SLOPE MIN.

PRECAST FLAT  
SLAB TOP

5'-0"

B

MATCH FINISHED GRADE

24"x24"x36"  
CONCRETE FOOTING

24"

24"

1" MINUS WASHED GRAVEL

B

NOTE: ALL AIR VALVES  
SHALL BE INSTALLED  
VERTICALLY PLUMB

**AIR VALVE SECTION**  
N.T.S.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

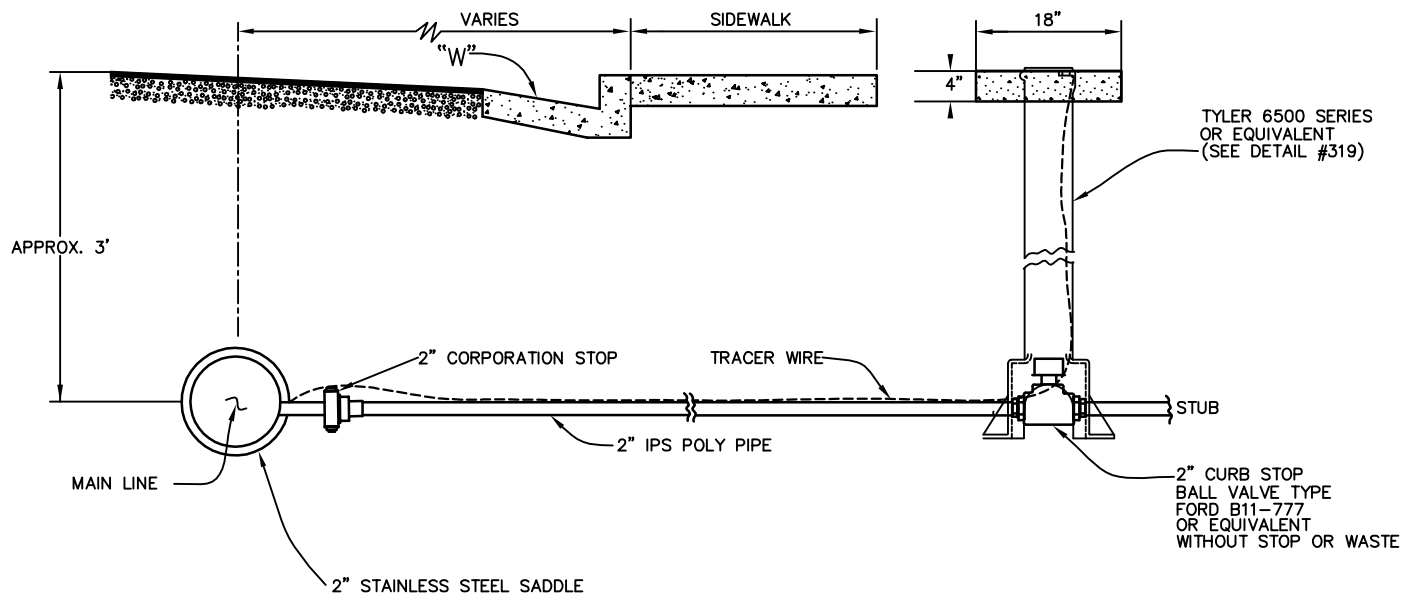
STANDARD AIR VAC DETAIL

STANDARD DWG. NO.	
316	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT



- ① THREADED COLLAR OR  
STAINLESS STEEL SADDLE
- ② THREADED CLOSE NIPPLE – 2" BRASS sch 80
- ③ THREADED 90° ELBOW – 2" BRASS sch 80
- ④ 2" SCHEDULE 80 POLLY PIPE
- ⑤ 2" THREADED BALL VALVE
- ⑥ THREADED CLOSE NIPPLE – 2" BRASS
- ⑦ UNION FLANGE COUPLER
- ⑧ THREADED NIPPLE – 2" BRASS
- ⑨ THREADED 90° ELBOW – 2" BRASS
- ⑩ 2" APCO 145C COMBINATION AIR/VAC VALVE



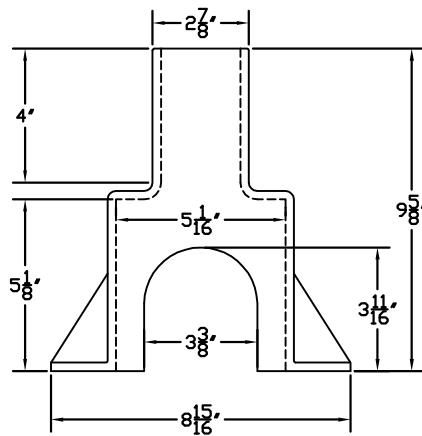
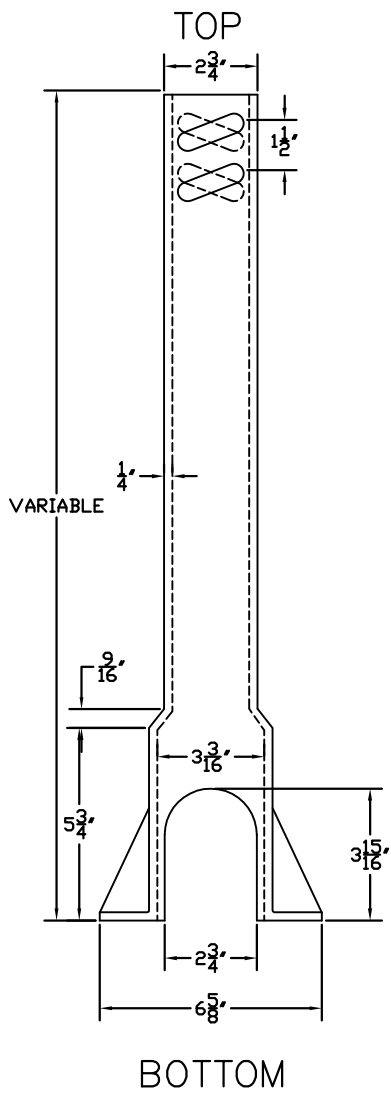
NOTES:  
1- ALL FITTINGS ARE TO BE BRASS  
EXCEPT AS NOTED.

# WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

## 2" FIRE LINE DETAIL

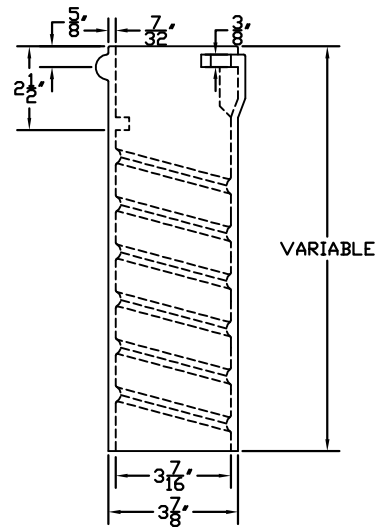
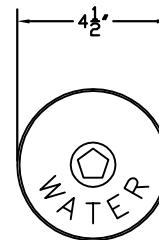
REVISIONS		
DATE	DESCRIPTION	BY

STANDARD DWG. NO.	
318	1 OF 1
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ENLARGED BASE  
FOR 2" CURBSTOP

ITEM	HEIGHT INCREASE
6500	6"



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

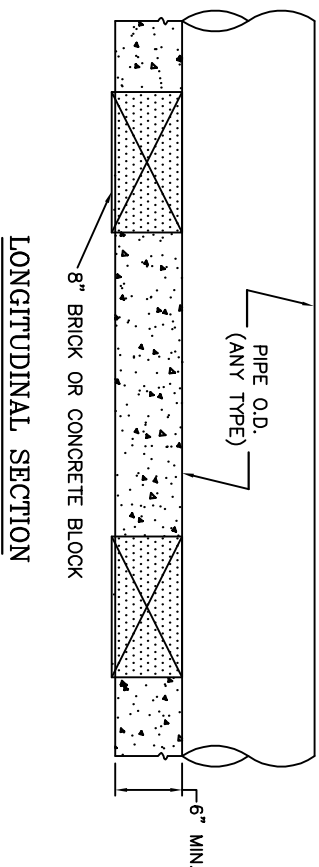
FIRE LINE VALVE BOX

REVISIONS		
DATE	DESCRIPTION	BY

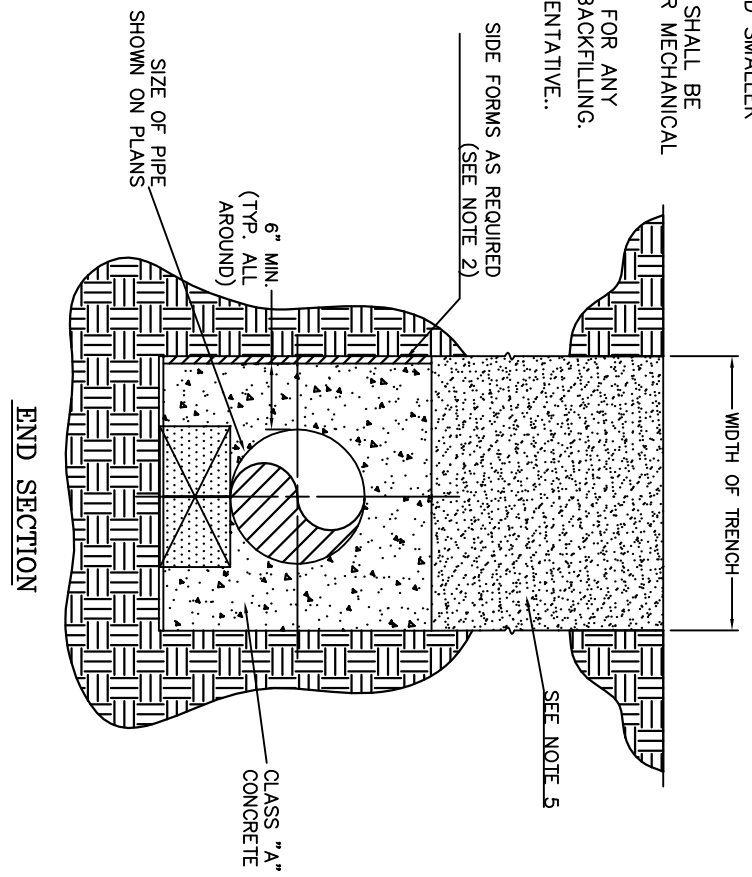
STANDARD DWG. NO.	
319	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

NOTES:

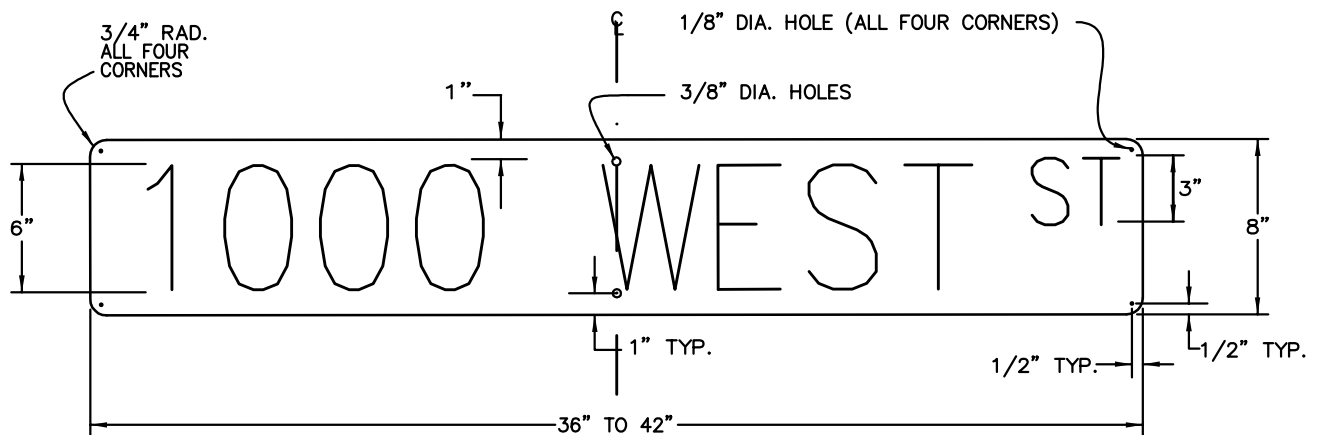
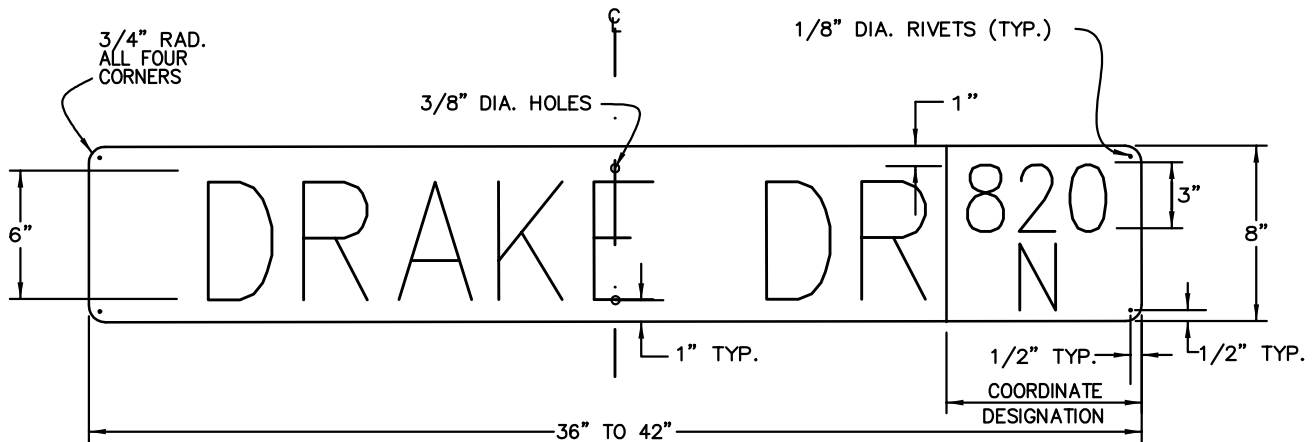
1. THIS DETAIL SHALL BE REQUIRED WHEN NEW OR EXISTING PIPE INSTALLATIONS WILL BE SUBJECT TO DAMAGE ANYTIME IN THE FUTURE DUE TO LACK OF PROPER COVER OR WHEN MINIMUM SEPARATION BETWEEN CROSSING OR ADJACENT UTILITIES CAN NOT BE MAINTAINED, AS DETERMINED BY THE COUNTY REPRESENTATIVE.
2. FOR PIPE OVER 18" DIA., WOOD, METAL, OR GYPSUM BOARD FORMS MUST BE USED TO FORM THE SIDES OF THE ENCASEMENT. GYPSUM BOARD FORMS MAY BE LEFT IN THE GROUND BELOW THE TOP OF THE ENCASEMENT. THIS SHALL BE OPTIONAL WITH POURING AGAINST TRENCH WALLS FOR ENCASEMENT OF 18" AND SMALLER PIPE.
3. FOR ALL SITUATIONS WHERE SIDE FORMS ARE USED, TRENCH WALLS SHALL BE OVER-EXCAVATED TO ALLOW SUFFICIENT ROOM TO OPERATE PROPER MECHANICAL COMPACTION EQUIPMENT.
4. CONCRETE WHICH SPILLS BEYOND 12" FROM THE SIDES OF THE PIPE FOR ANY REASON SHALL BE REMOVED BACK TO THE PROPER LINE PRIOR TO BACKFILLING.
5. COVER TO BE APPROVED BY DESIGN ENGINEER AND COUNTY REPRESENTATIVE..
6. THE CONCRETE ENCASEMENT SHALL BE 3000 PSI CONCRETE WITH A MINIMUM THICKNESS ON ALL SIDES OF 6".
  - 1) 8" DIA. = .11 C.Y. OF CONCRETE PER LINEAL FT.
  - 2) 10" DIA. = .12 C.Y. OF CONCRETE PER LINEAL FT.
  - 3) 12" DIA. = .14 C.Y. OF CONCRETE PER LINEAL FT.
  - 4) 15" DIA. = .15 C.Y. OF CONCRETE PER LINEAL FT.



LONGITUDINAL SECTION



END SECTION



**NOTES:**

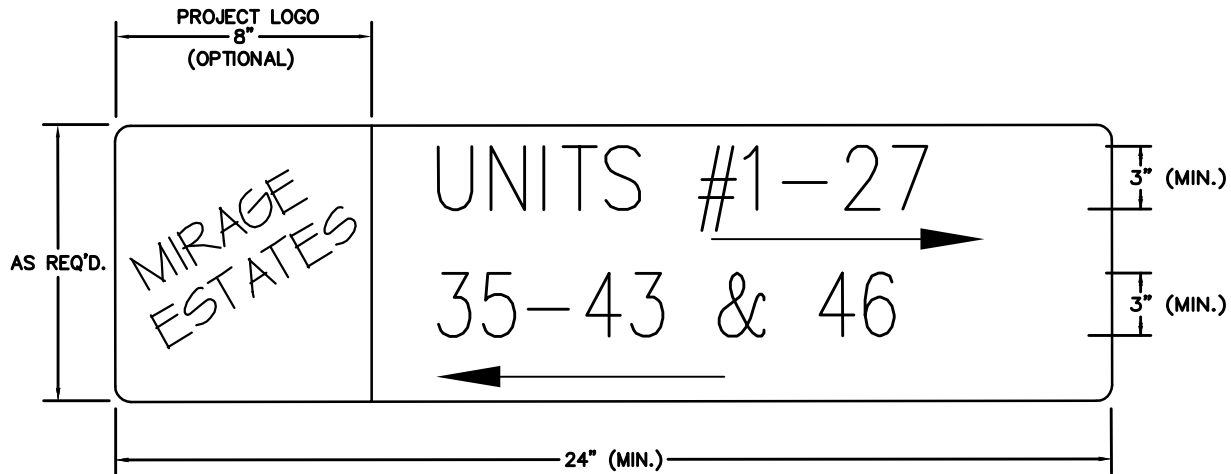
- 1- BACKGROUND SHALL BE GREEN, LEGEND AND LETTERS SHALL BE WHITE.
- 2- ALL SHEETING SHALL BE HIGH INTENSITY REFLECTIVE SHEETING.  
(FP-85 TYPE III A)
- 3- SIGNS SHOULD BE MADE BY THE "REVERSE OUT" PROCESS. NO STICK ON LETTERS.
- 4- SIGN BLANK SHALL BE 6061-T6 HEAT TREATED HIGH TENSILE DEGREASED ALUMINUM WITH ALODINE 1200 FINISH. MIN. THICKNESS SHALL BE 0.080".
- 5- EACH SIGN SHALL CONSIST OF TWO PLATES RIVETED TOGETHER AND MOUNTED AS REQUIRED.
- 6- SIGNS ON PRIVATE ROADS ARE REQUIRED AND SHOULD MEET SAME SPECIFICATIONS OF STANDARD SIGNS EXCEPT FOR BACKGROUND COLOR.
- 7- ALL STREETS WITH NAMES SHALL ALSO HAVE THE COORDINATE DESIGNATION ON THE SIGN IN THE APPROPRIATE LOCATION UNLESS OTHERWISE APPROVED.
- 8- ADDRESS COORDINATOR SHALL BE CONTACTED PRIOR TO MAKING SIGNS TO VERIFY PROPER NAMES AND COORDINATES.
- 9- ALL LETTERS SHALL BE UPPER CASE. LETTERS AND NUMBERS SHALL CONFORM TO THE HEIGHT, WIDTH, STROKE WIDTH, AND SPACING AS PER THE U.S. DEPT. OF TRANSPORTATION PUBLICATION "STANDARD ALPHABET FOR HIGHWAY SIGNS".

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

STANDARD STREET SIGN

STANDARD DWG. NO.	
400	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE



### INTERIOR DIRECTIONAL SIGN



### MAIN ENTRANCE STREET SIGN

#### NOTES:

- 1- SIGNS SHALL CONFORM TO CITY STREET SIGN STANDARDS AND SPECIFICATIONS.
- 2- STANDARD BACKGROUND IS BLUE. LETTERS AND LEGEND SHALL BE WHITE. SHEETING TYPE SHALL BE HIGH INTENSITY
- 3- SIGNS MOUNTED ON PUBLIC RIGHT OF WAY SHALL FOLLOW CITY INSTALLATION AND PLACEMENT STANDARDS. SAID STANDARDS ARE RECOMMENDED FOR INTERIOR SIGNS.
- 4- WHEN PROJECT IS ADDRESSED SIMILAR TO A SUBDIVISION WITH PUBLIC STREETS, THE ABOVE INTERIOR DIRECTIONAL SIGN IS NOT USED. SEE COUNTY ADDRESS COORDINATOR.
- 5- PROJECT LOGO, IF USED, MUST BE APPROVED BY THE COUNTY ADDRESS COORDINATOR PRIOR TO USE.

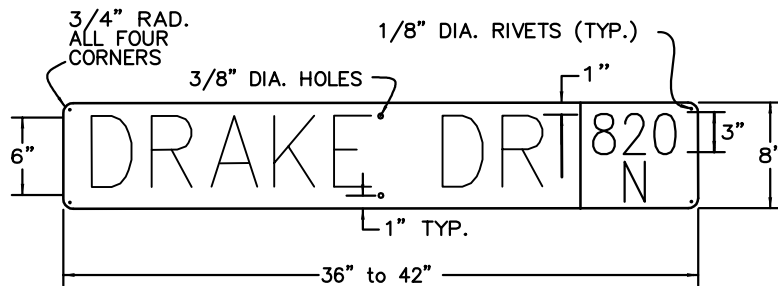
WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

PRIVATE STREET SIGNS

STANDARD DWG. NO.	
401	1 OF 1
APPROVED:	
DATE: MAY 2009	BY: TE

# SIGN DESIGNATION FORM



## STANDARD WASHINGTON COUNTY SIGN

THIS FORM TO BE COMPLETED BY THE COUNTY ADDRESS COORDINATOR PRIOR TO ORDERING OF STREET SIGNS BY DEVELOPER.

PROJECT NAME

DATE

BY

### NOTES:

- 1- SEE DRAWINGS #400 & 401 FOR SIGN SPECIFICATIONS.
- 2- SIGNS ON PRIVATE ROADS SHALL MEET ALL SPECIFICATIONS OF STANDARD SIGNS EXCEPT BACKGROUND SHALL BE BLUE.
- 3- ADDRESS COORDINATOR MUST BE CONTACTED PRIOR TO MAKING SIGNS TO VERIFY PROPER NAMES AND COORDINATES.
- 4- ALL STREETS WITH NAMES WILL ALSO HAVE COORDINATES DESIGNATED ON SIGN.

### LOCATION GUIDE

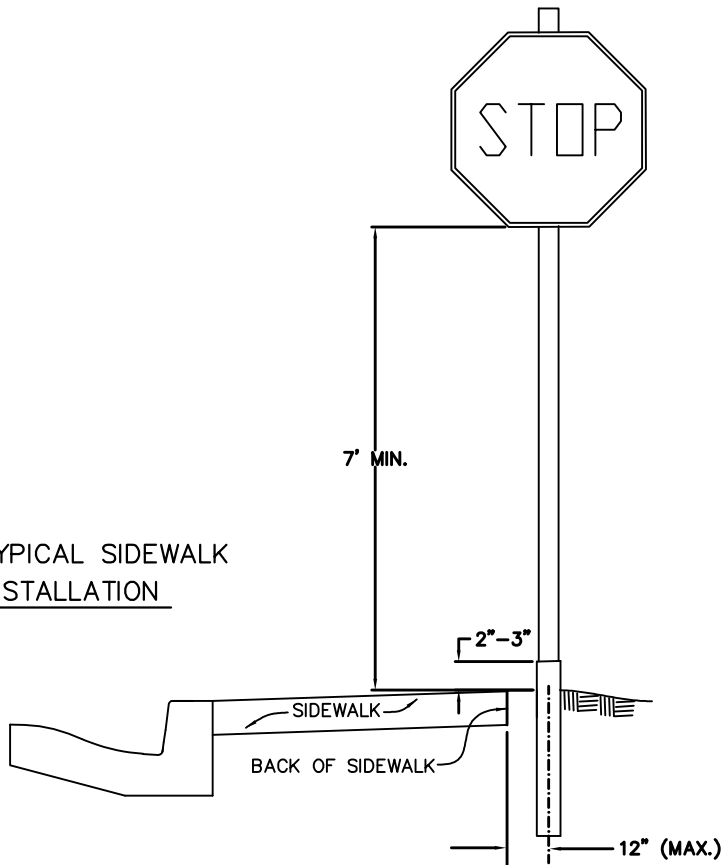

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

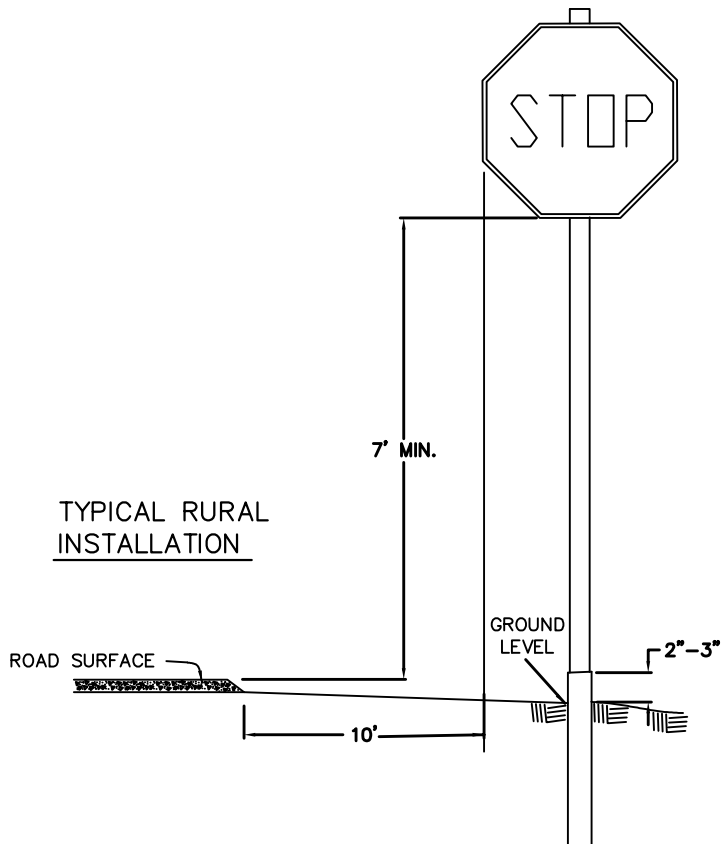
SIGN DESIGNATION FORM

STANDARD DWG. NO.	
402	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

TYPICAL SIDEWALK  
INSTALLATION



TYPICAL RURAL  
INSTALLATION



NOTES:

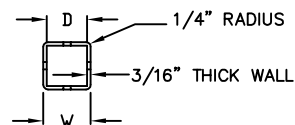
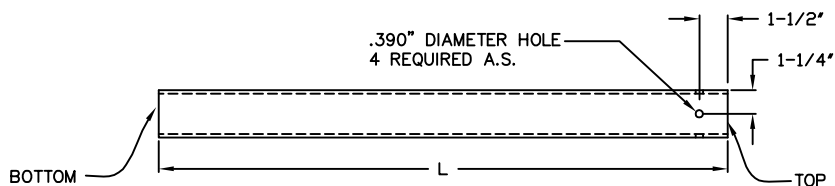
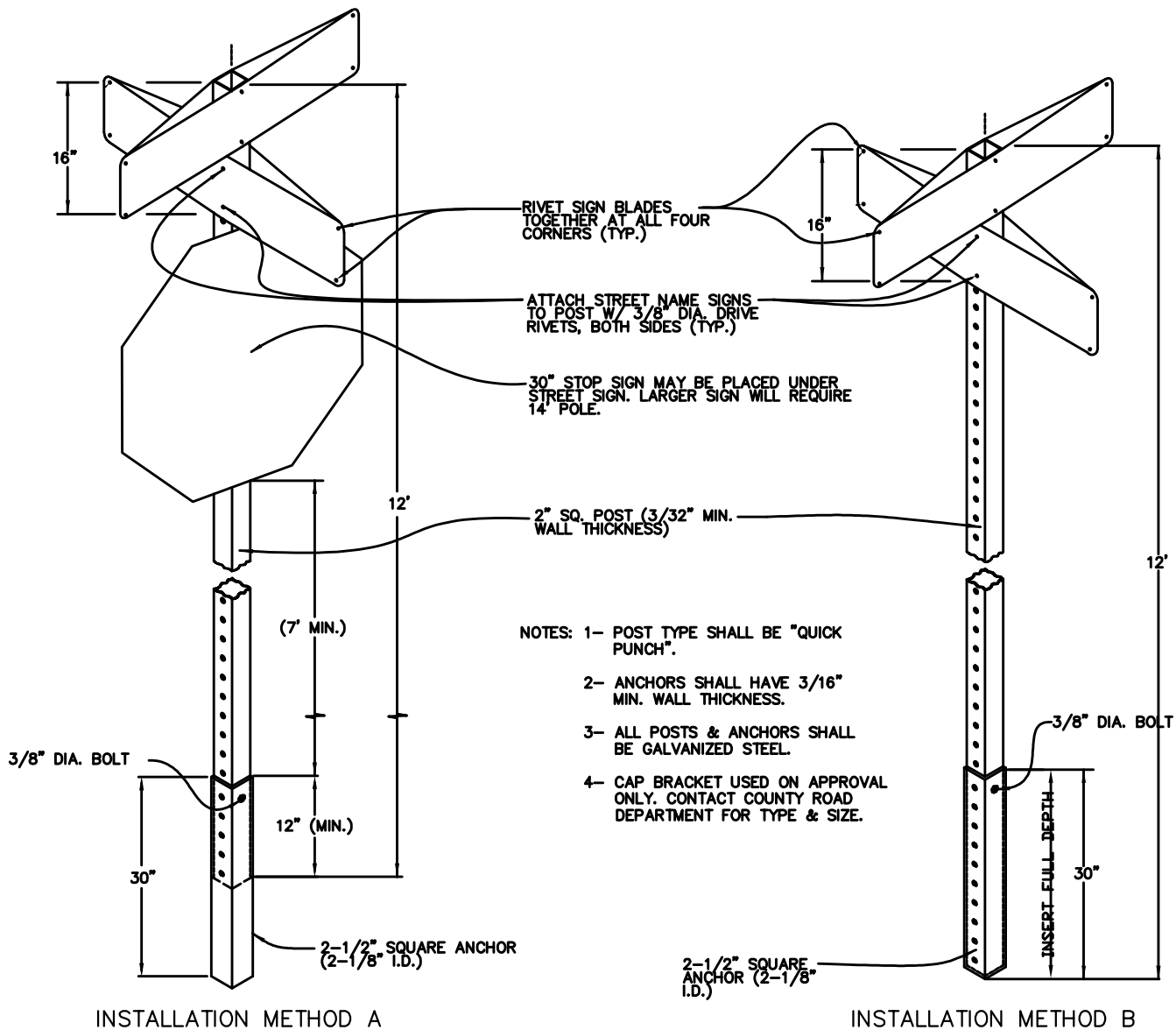
- 1- SIGNS SHALL BE PLACED IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES. (M.U.T.C.D.).
- 2- STREET NAME SIGNS SHALL BE REQUIRED ON ALL COUNTY ROADS.
- 3- ALL POST COMPONENTS SHALL BE GALVANIZED STEEL.
- 4- STREET NAME SIGNS PLACED ABOVE STOP SIGN SHALL BE AS SHOWN IN DRAWING 411.
- 5- WHERE PLANTER STRIP LIES BETWEEN SIDEWALK AND CURB, SIGNS SHALL BE INSTALLED IN PLANTER STRIP AS PER M.U.T.C.D.
- 6- SIGNS SHALL BE PLACED TO BE CLEARLY VISABLE. ALL OBSTRUCTIONS SUCH AS TREES, POLES, OTHER SIGNS, ETC, SHALL BE AVOIDED.

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
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SIGN, POST AND INSTALLATION  
DETAILS

STANDARD DWG. NO.	
410	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:



SIGN ANCHOR DETAIL

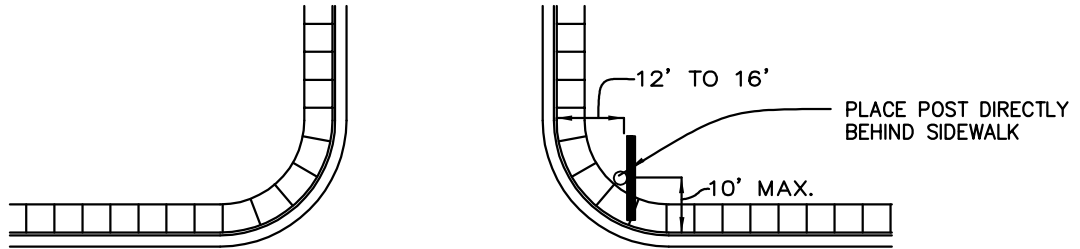
MARK	DIM.	TOLERANCE
D	2-1/8"	+1/16", -0"
L	30"	± 1/2"
W	2-1/2"	± 1/64"

WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

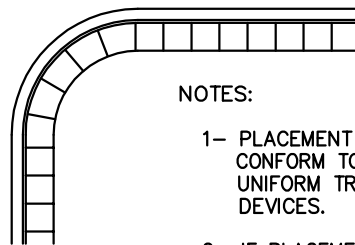
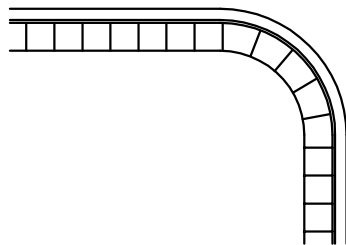
REVISIONS		
DATE	DESCRIPTION	BY

SIGN POST & MOUNTING DETAILS

STANDARD DWG. NO.	
411	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

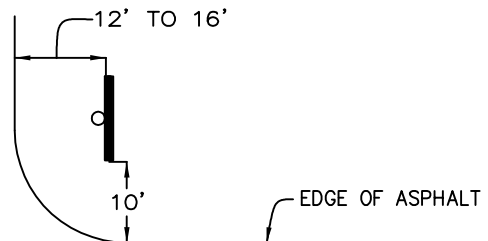


TYPICAL URBAN INSTALLATION

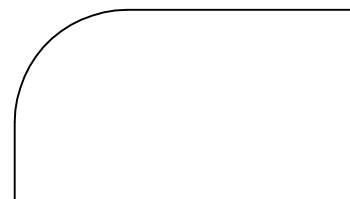
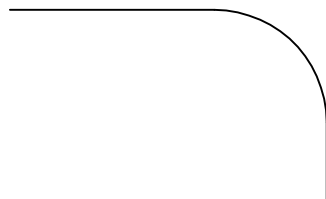


NOTES:

- 1- PLACEMENT OF ALL SIGNS TO CONFORM TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- 2- IF PLACEMENT STANDARDS CANNOT BE MET, CONTACT PUBLIC WORKS DEPARTMENT.
- 3- IF INSTALLATION ACCORDING TO STANDARDS CAUSES THE SIGN TO BE OBSTRUCTED OR ITS VISIBILITY IMPAIRED IN ANY WAY, MODIFICATIONS MAY BE NECESSARY. CALL PUBLIC WORKS DEPT. FOR ASSISTANCE.



TYPICAL RURAL INSTALLATION



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

TYPICAL SIGN PLACEMENT DETAILS

STANDARD DWG. NO.	
412	1 OF 1
APPROVED:	
DATE: MAY 2009	BY:

## LEGEND

BR – Basal Rock – min. width extending back into wall must be  $\frac{1}{3}$  of H.

CR – Cap Rock – min. width extending back into wall must be 2 ft.

GL – Geogrid Embedment Length – specified by Design Engineer.

GS – Geogrid Vertical Spacing – specified by Design Engineer.

S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft.

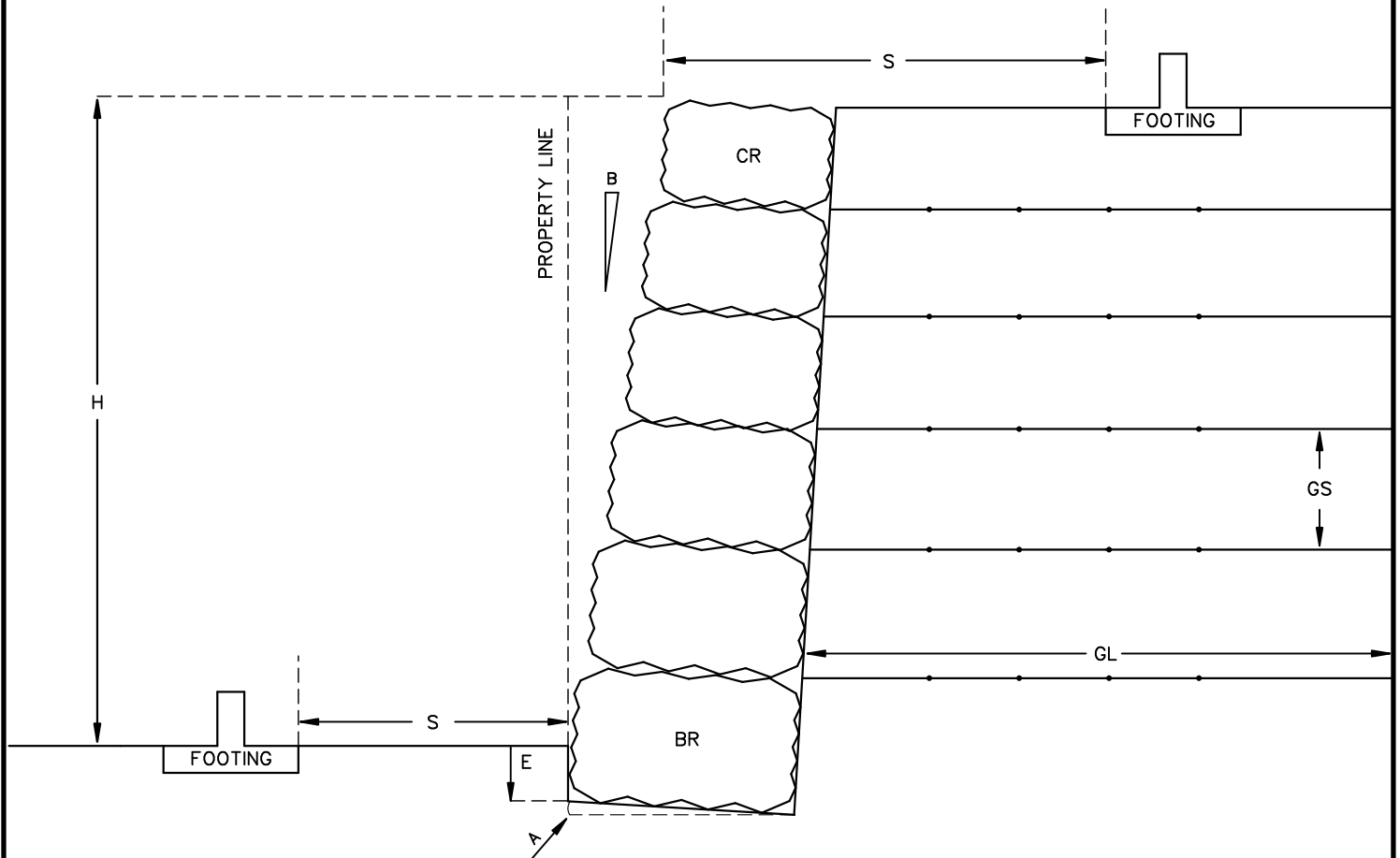
E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade.

G – Geogrid Reinforcement – retaining walls shall include geogrid reinforcement with positive connection to wall as specified by Design Engineer.

B – Batter Steepness – the batter (steepness) of retaining wall face shall not exceed one horizontal to six vertical (1H:6V).

H – Total Rockery Height – total height of retaining wall shall not exceed 12 ft in fill condition and not exceed 15 ft in cut condition.

A – Basal Rock Angle – basal rock foundation shall be angled  $1^{\circ}$  –  $5^{\circ}$  degrees off horizontal to promote protective retention condition.



## WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

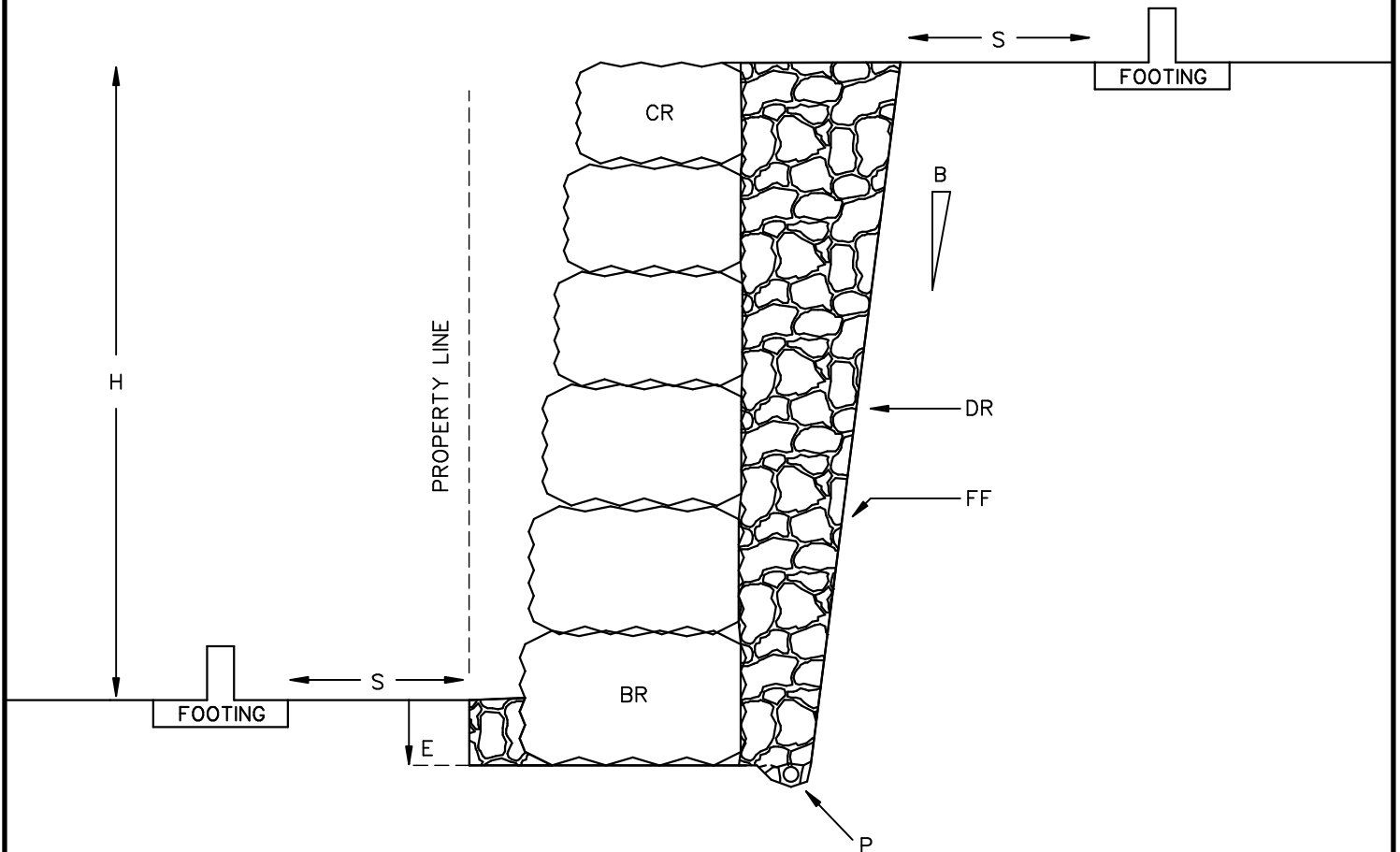
REVISIONS		
DATE	DESCRIPTION	BY

## SINGLE-TIER ROCKERY RETAINING WALL

STANDARD DRAWING NO.	
#513	1 OF 1
APPROVED:	
DATE: APRIL 2024	BY: ET

# LEGEND

- BR – Basal Rock – min. width extending back into wall must be  $\frac{1}{3}$  of H
- CR – Cap Rock – min. width extending back into wall must be 2 ft
- DR – Drain Rock – specified by Design Engineer
- FF – Filter Fabric – specified by Design Engineer
- S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft
- B – Batter Steepness – the batter (steepness) of retaining wall face shall not exceed one horizontal to six vertical (1H:6V)
- P – perforated drain pipe that daylights to proper drain outlet
- E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade
- H – Total Rockery Height – total height of retaining wall shall not exceed 10 ft



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

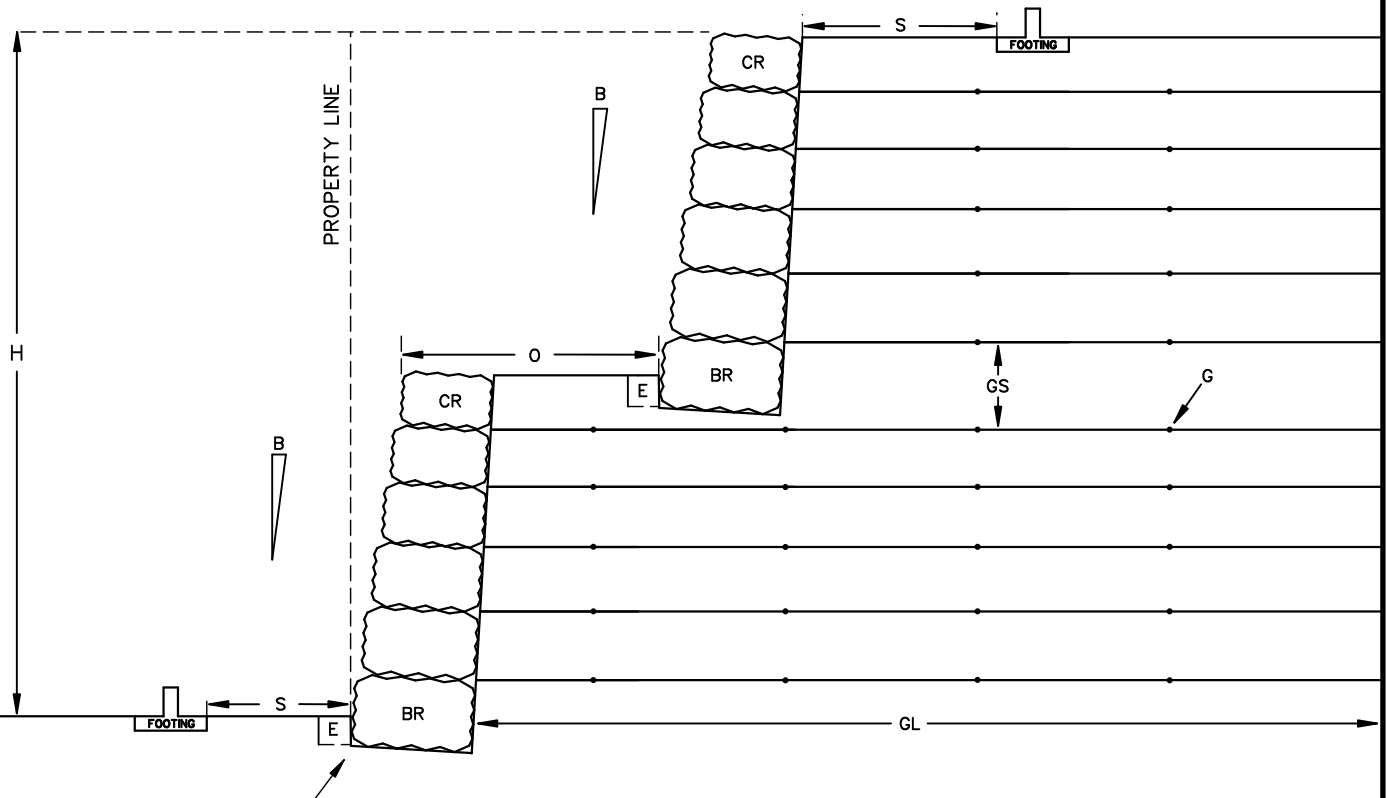
REVISIONS		
DATE	DESCRIPTION	BY

GRAVITY ROCKERY RETAINING WALL

STANDARD DRAWING NO.	
#514	1 OF 1
APPROVED:	
DATE: APRIL 2024	BY: ET

## LEGEND

- BR – Basal Rock – min. width extending back into wall must be  $\frac{1}{3}$  of H
- CR – Cap Rock – min. width extending back into wall must be 2 ft
- GL – Geogrid Embedment Length – specified by Design Engineer
- GS – Geogrid Vertical Spacing – specified by Design Engineer
- S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft
- O – Offset – terraces shall be separated by a minimum offset of  $\frac{1}{2}$  of the greatest wall height. Measured from the top face of the lower wall and the bottom face of the upper wall.
- E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade
- G – Geogrid Reinforcement – retaining walls shall include geogrid reinforcement with positive connection to wall as specified by Design Engineer
- B – Batter Steepness – the batter (steepness) of retaining wall face shall not exceed one horizontal to six vertical (1H:6V)
- H – Total Rockery Height – total height of retaining wall shall not exceed 12 ft in fill condition and not exceed 15 ft in cut condition
- A – Basal Rock Angle – basal rock foundation shall be angled 1 – 5 degrees off horizontal to encourage "protective" retainment condition



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

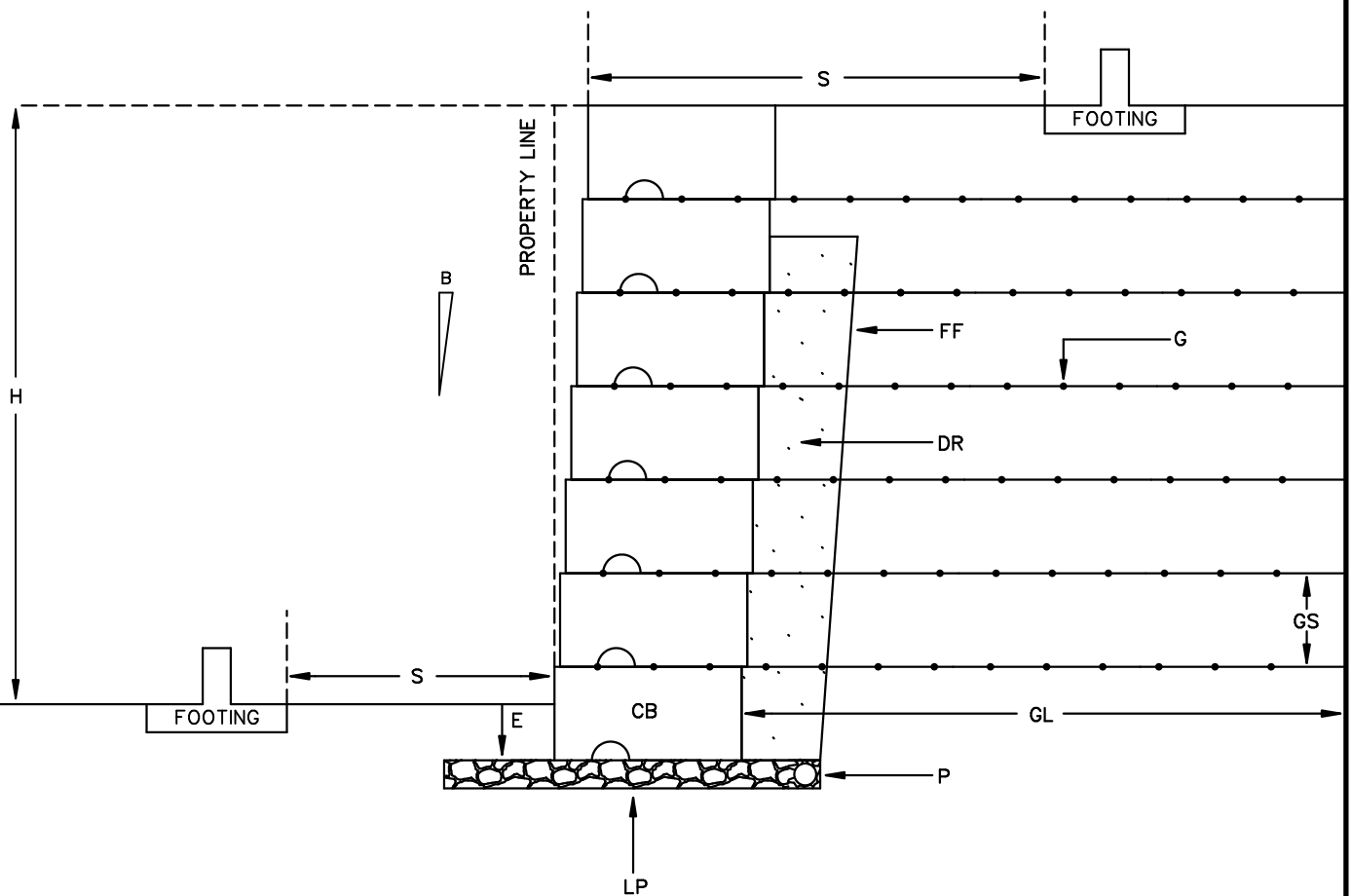
REVISIONS		
DATE	DESCRIPTION	BY

TERRACED ROCKERY RETAINING WALL

STANDARD DRAWING NO.	
#515	1 OF 1
APPROVED:	
DATE: APRIL 2024	BY: ET

# LEGEND

CB – Concrete Block – refer to 4.3.5.10 for concrete block specifications  
 DR – Drain Rock – specified by Design Engineer  
 FF – Filter Fabric – specified by Design Engineer  
 GS – Geogrid Vertical Spacing – specified by Design Engineer.  
 GL – Geogrid Embedment Length – specified by Design Engineer.  
 LP – Leveling Pad – a level surface at least 6" thick consisting of aggregate materials as specified by Design Engineer  
 G – Geogrid Reinforcement – retaining walls shall include geogrid reinforcement with positive connection to wall as specified by Design Engineer.  
 S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft  
 B – Batter Steepness – batter of wall face shall not exceed block manufacturers design recommendations  
 P – Perforated Drain Pipe – daylights to proper drain outlet  
 H – Total Wall Height – total height of retaining wall shall not exceed 10 ft  
 E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

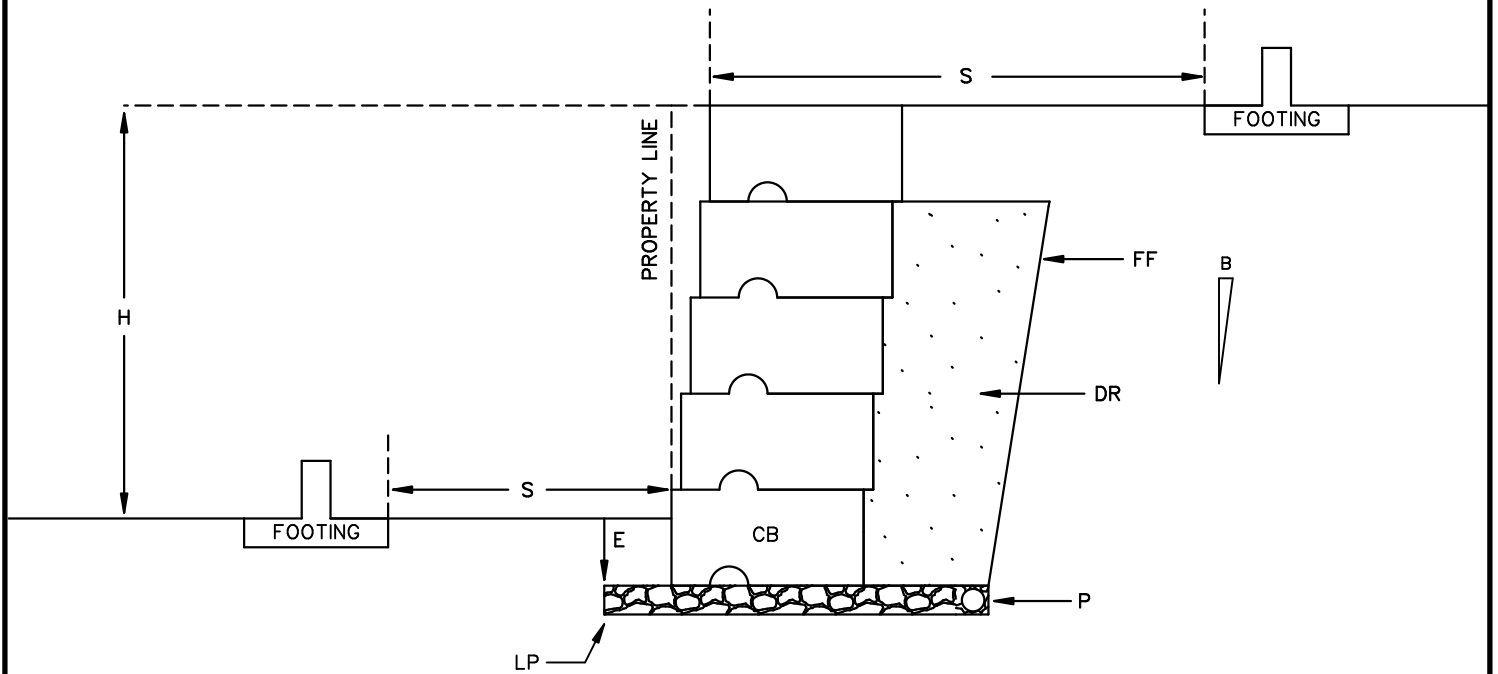
REVISIONS		
DATE	DESCRIPTION	BY

SINGLE-TIER SEGMENTAL BLOCK RETAINING WALL

STANDARD DRAWING NO.	
#516	1 OF 1
APPROVED:	
DATE: MAY 2024	BY: ET

# LEGEND

CB – Concrete Block – refer to 4.3.5.10 for concrete block specifications  
 DR – Drain Rock – specified by Design Engineer  
 FF – Filter Fabric – specified by Design Engineer  
 LP – Leveling Pad – a level surface at least 6" thick consisting of aggregate materials as specified by Design Engineer  
 S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft  
 B – Batter Steepness – batter of wall face shall not exceed block manufacturers design recommendations  
 P – Perforated Drain Pipe – daylights to proper drain outlet  
 H – Total Wall Height – total height of retaining wall shall not exceed 10 ft  
 E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
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GRAVITY SEGMENTAL BLOCK RETAINING WALL

STANDARD DRAWING NO.	
#517	1 OF 1
APPROVED:	
DATE: MAY 2024	BY: ET

## LEGEND

CB – Concrete Block – refer to 4.3.5.10 for concrete block specifications

DR – Drain Rock – specified by Design Engineer

FF – Filter Fabric – specified by Design Engineer

GS – Geogrid Vertical Spacing – specified by Design Engineer.

GL – Geogrid Embedment Length – specified by Design Engineer.

LP – Leveling Pad – a level surface at least 6" thick consisting of aggregate materials as specified by Design Engineer

G – Geogrid Reinforcement – retaining walls shall include geogrid reinforcement with positive connection to wall as specified by Design Engineer.

S – Setback – distance from retaining wall (low or high side) to building or structure footing shall be a min. of 10 ft

O – Offset – terraces must be offset by  $1/2 H$  between tiers as measured from the top face of the lower wall to the bottom face of the upper wall.

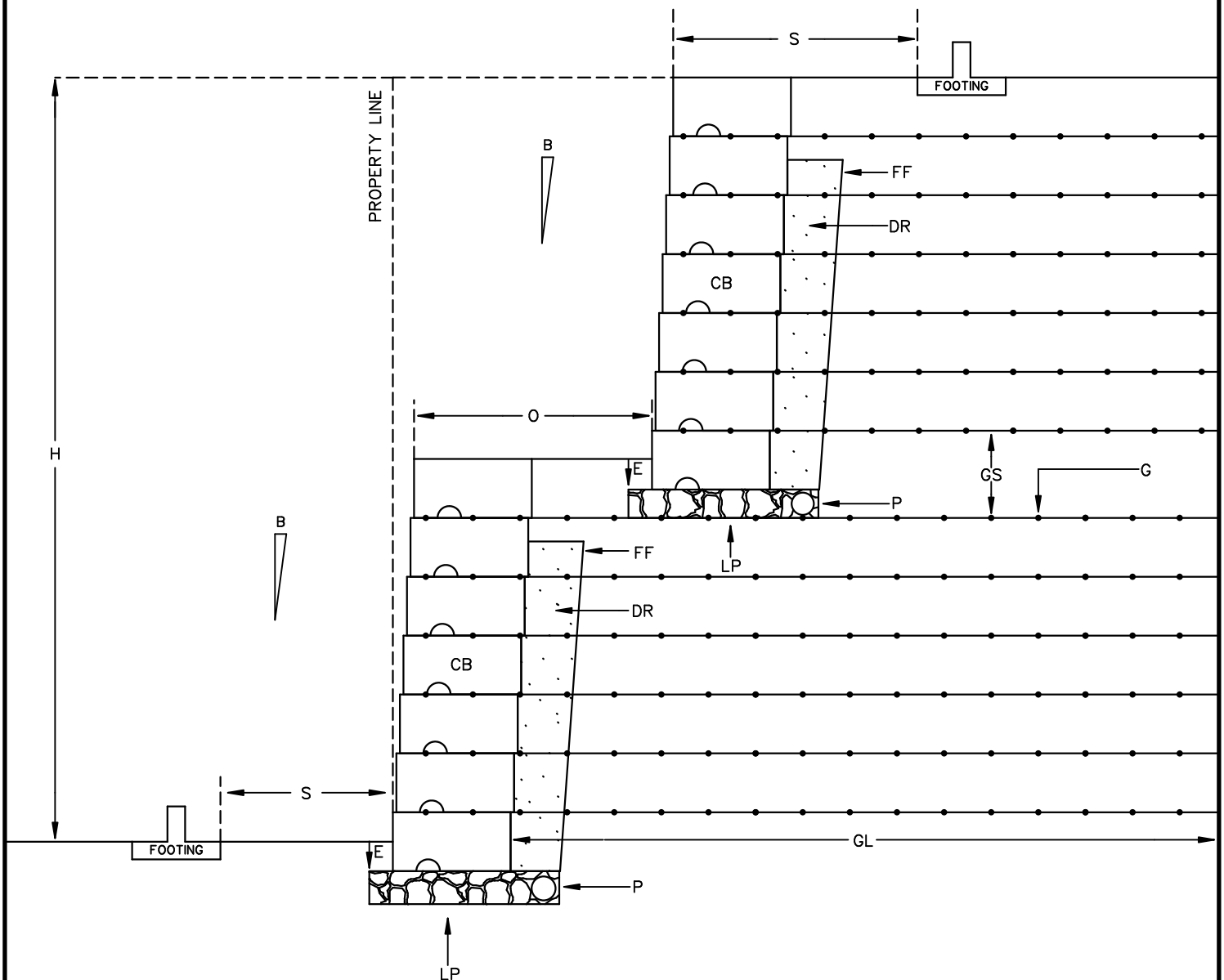
B – Batter Steepness – batter of wall face shall not exceed block manufacturers design recommendations

P – Perforated Drain Pipe – daylights to proper drain outlet

H – Total Wall Height – total height of retaining wall shall not exceed 12 ft in fill condition and not exceed 15 ft in cut condition.

E – Embedment Depth – shall be embedded a min. of 1 ft beneath grade

Note: Each tier may not exceed 6 ft in fill condition  
Each tier may not exceed 7.5 ft in cut condition



WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

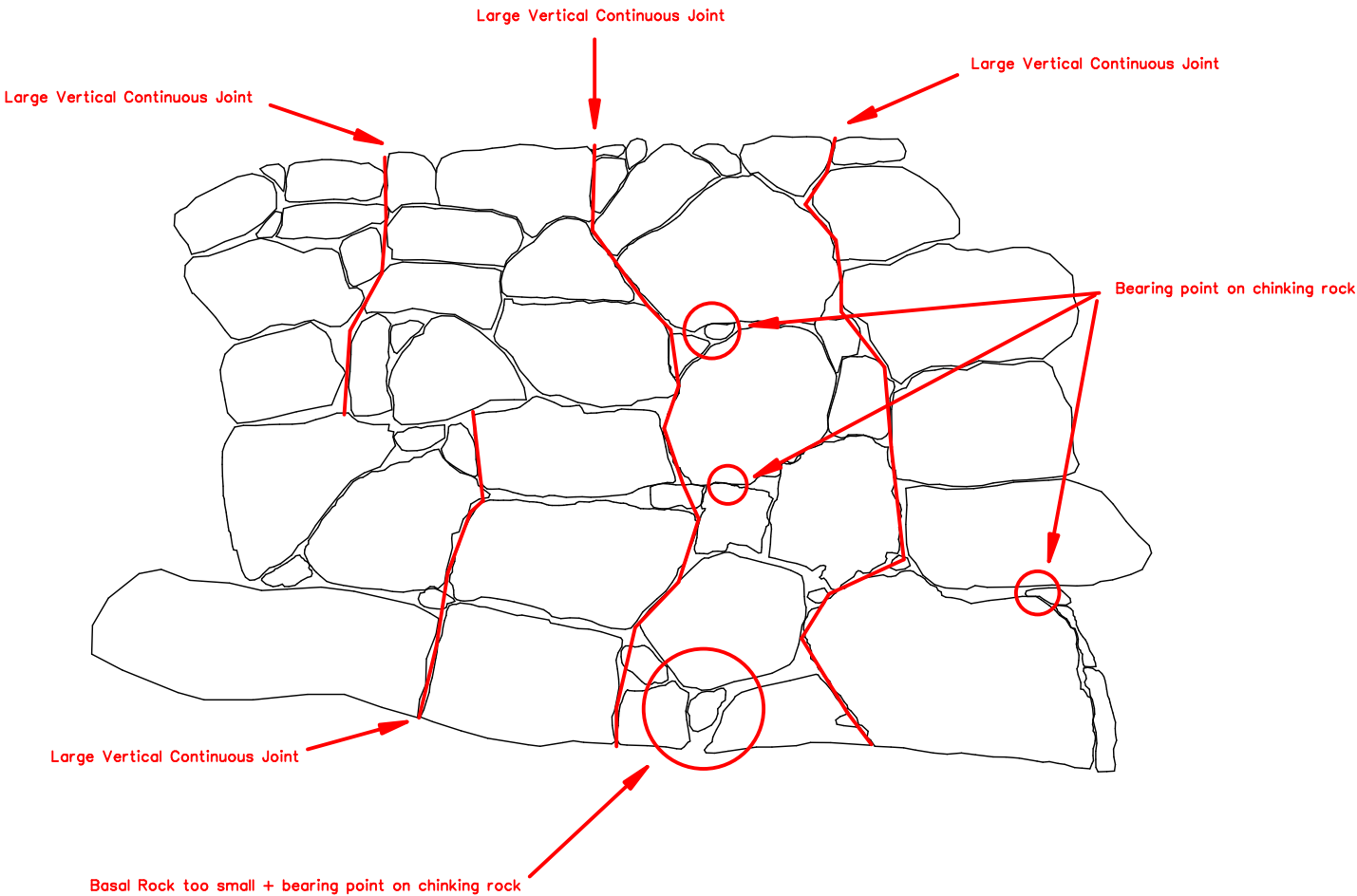
REVISIONS		
DATE	DESCRIPTION	BY

TERRACED SEGMENTAL BLOCK RETAINING WALL

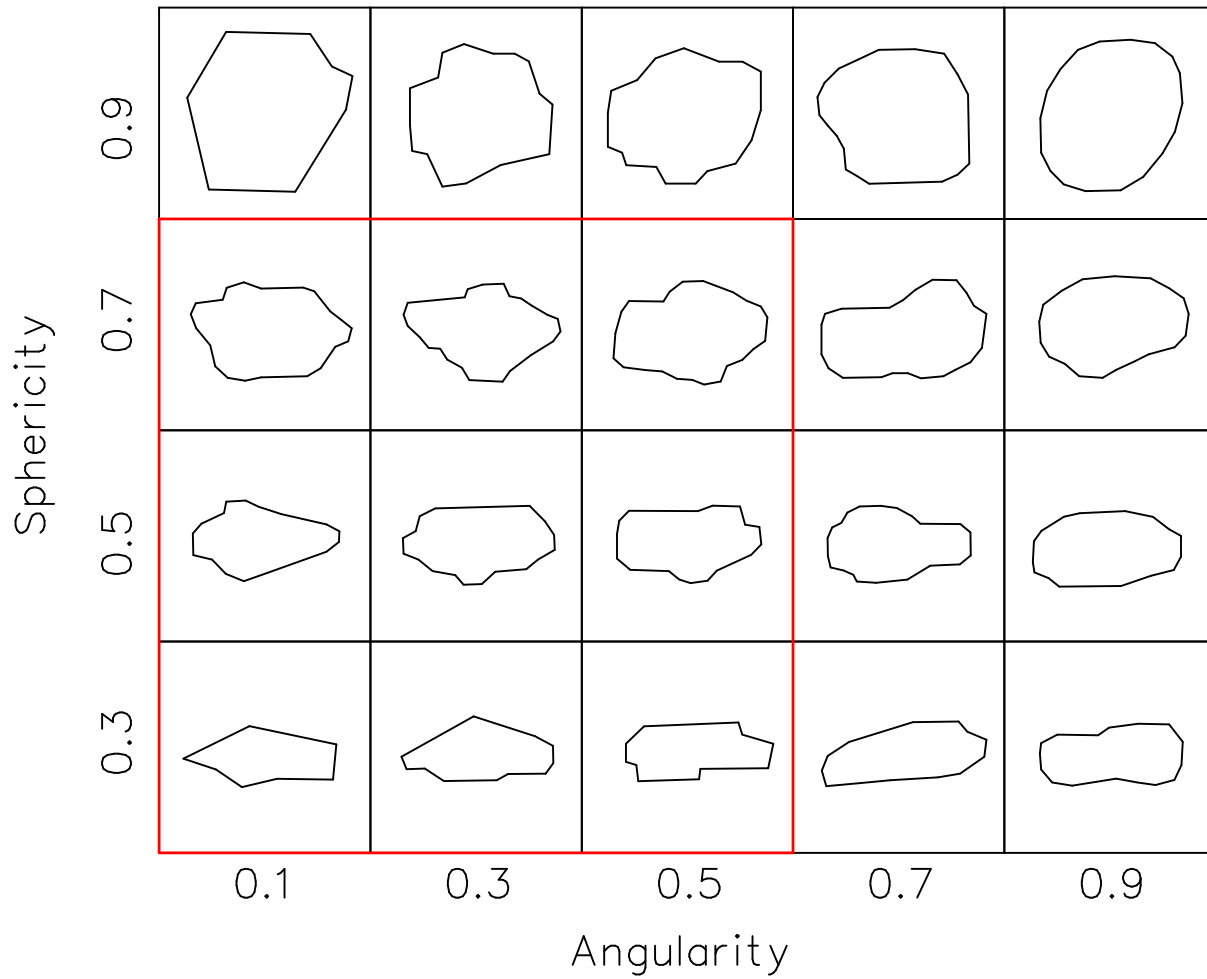
STANDARD DRAWING NO.	
#518	1 OF 1
APPROVED:	
DATE: MAY 2024	BY: ET

Bearing Point: specific spot on a rock where its weight is primarily concentrated and transferred to the supporting rock beneath it.

Chinking Rock: small rock used to fill voids and distribute loads between larger facing rocks.



REVISIONS			WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT		STANDARD DRAWING NO.	
DATE	DESCRIPTION	BY	UNACCEPTABLE ROCK WALL EXAMPLE		#519	1 OF 1
					APPROVED:	
					DATE: MAR 2024	BY: ET



# WASHINGTON COUNTY PUBLIC WORKS DEPARTMENT

REVISIONS		
DATE	DESCRIPTION	BY

## DEFINITION OF SPHERICITY AND ANGULARITY

STANDARD DRAWING NO.	
#520	1 OF 1
APPROVED:	
DATE: MAR 2024	BY: ET